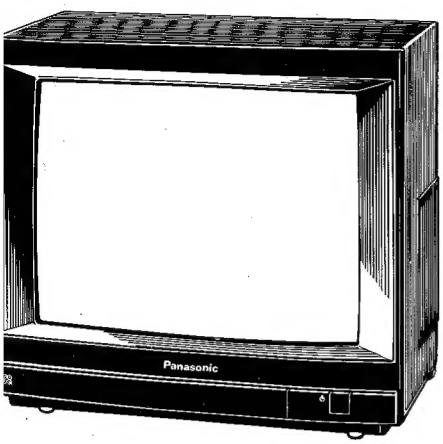
ORDER NO. SM- 88028

Service Manual

Colour Television



TC-1785DRS

Chassis No. Z3T

Specifications

Power Source:	220 volts, 50 Hz, AC
Power Consumption:	80 W
Aerial Impedance:	75 Ω unbalanced, coaxial type
Receiving Channels:	VHF CH2-CH12 S1-3, M1-10, U1-9 UHF CH21-CH69
Intermediate Frequency:	Video 38.9 MHz Sound 33.4 MHz Colour 34.47 MHz
Video/Audio Terminals:	
21 pin IN	Video 1 Vp-p 75 Ω Audio 0.67 Vrms, 47k Ω
21 pin OUT	Video 1 Vp-p 75 Ω Audio 0.67 Vrms (100% modulation) 1k Ω
Picture Tube:	A41EAM01X01 (44 cm) measured diagonally, 90° deflection Picture Tube
Anode Voltage:	25.0 kV ± 1.5 kV
Speaker:	10 cm, 8 Ω, Round
Sound Output:	3 Watts maximum
Dimensions:	Height: 389 mm Width: 430 mm Depth: 424 mm
Net Weight:	14.8 kg

Technische Daten

Netzspannung:	220 V Wechselspannung, 50 Hz
Leistungaufnahme:	80 W
Antennenanschluß:	DIN-Buchse, koaxial, 75 ohm impedanz unsymmetrisch
Empfangskanäle:	VHF CH-2-CH12, S1-3, M1-10, U1-9, UHF CH21-CH69
Zwischenfrequenzez:	Bildträger, 38,9 MHz Tonträger, 33,4 MHz Farbhilfsträger, 34.47 MHz
Video/Audio Anschlüsse:	
21-poliger Eingang	Video 1 Vs-s 75 Ω Audio 0.67 Vrms, 47k Ω
21 pin-poliger Ausgang	Video 1 Vs-s 75 Ω Audio 0.67 Vrms (100% modulation) 1k Ω
Bildröhre:	A41EAM01X01 (44 cm) Schirmdiagonale 90 Ablenkung
Hochspannung:	25.0 kV ± 1.5 kV
Lautsprecher:	10 cm, 8 Ω, Rund
Tonausgangs-leistung:	3 W (Maximalleistung)
Amessungen:	389 × 430 × 424 mm
Gewicht:	14.8 kg

Panasonic

CONTENTS

INHALT

SAFETY PRECAUTIONS

GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations, are properly installed.
4. When the receiver is not to be used for a long period of time, unplug the power cord from the AC outlet.
5. Potential, as high as 25.0 kV, is present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the receiver chassis before handling the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, aerials, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 4 MΩ and 20 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be ∝.

SICHERHEITS-VORKEHRUNGEN

ALLGEMEINE RICHTLINIEN

1. Es ist empfehlenswert, einen Trenntransformator in die Stromversorgung zu schalten, bevor Reparaturen an einem Gerät vorgenommen werden, dessen Chassis unter Spannung steht.
2. Bei der Durchführung von Servicearbeiten dürfen die ursprünglichen Kabelanschlüsse nicht vertauscht werden, dies gilt insbesondere für die Anschlüsse im Hochspannungsteil. Hat sich ein Kurzschluß ereignet, dann sind alle Teile, an denen Spuren von Überhitzung sichtbar sind auszuwechseln.
3. Nach Beenden der Servicearbeiten ist sicherzustellen, daß alle Sicherheitsvorrichtungen, wie Isolationsstege, Isolationspapiere, Abschirmungen und Isolations - R.C. - Glieder wieder richtig eingesetzt sind.
4. Wenn der Fernseher während längerer Zeit nicht in Betrieb gesetzt wird, sollte der Netzstecker aus der Netzsteckdose gezogen werden.
5. Spannungen von bis zu 25.0 kV sind vorhanden, wenn dieser Fernseher in Betrieb ist. Die Inbetriebnahme des Fernsehers ohne aufgesetzte Rückwand bringt die Gefahr eines elektrischen Schlages von der Fernseher - Stromversorgung mit sich. Servicearbeiten sollten daher auch nie durch Personen versucht werden, die nicht in vollem Umfang mit den Sicherheitsvorkehrungen beim Umgang mit Hochspannungsgeräten vertraut sind. Vor der Handhabung mit der Bildröhre ist die Anode der Bildröhre immer an dem Empfängerchassis zu entladen.
6. Nach Beenden der Servicearbeiten sind die folgenden Kriechstrom-Prüfungen durchzuführen, um den Kunden vor der Gefahr eines elektrischen Schlages zu schützen.

MESSUNG DES ISOLATIONSWIDERSTANDES IM ABGESCHALTETEN ZUSTAND

1. Den Netzstecker aus der Netzsteckdose ziehen und die beiden Steckerstifte kurzschließen.
2. Den Geräteschalter des Fernsehgerätes einschalten.
3. Mit einem Ohmmeter den Widerstandswert zwischen dem überbrückten Netzkabelstecker und jedem zugänglichen Metallteil am Gehäuse des Fernsehgerätes, wie Schraubenköpfe, Antennen, Achsen der Regler, Griffassungen usw.messen. Wenn ein zugängliches Metallteil eine Rückleitung zum Chassis hat, sollte die Anzeige zwischen 4 MΩ und 20 MΩ betragen. Wenn ein zugängliches Metallteil keine Rückleitung zum Chassis hat, muß die Anzeige ∝ betragen.

EAKAGE CURRENT HOT CHECK (See Fig. 1)

. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.

. Connect a 2 kΩ, 10 W resistor, in series with an exposed metallic part on the receiver and an earth such as water pipe.

. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.

. Check each exposed metallic part, and measure the voltage at each point.

. Reverse the AC plug in the AC outlet and repeat each of the above measurements.

. The potential at any point should not exceed 1.4 volts RMS. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

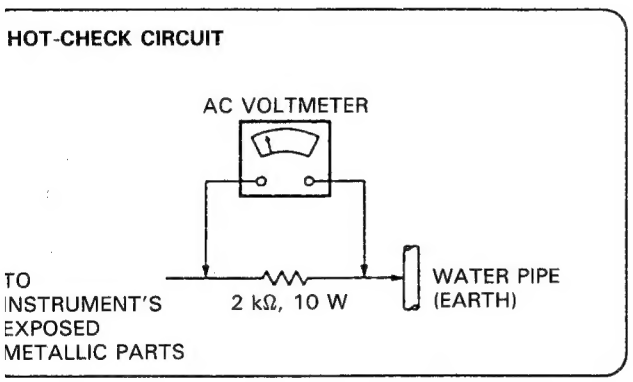


Fig. 1

-RADIATION

/ARNING:

. The potential sources of X-Radiation in TV sets are the High Voltage section and the picture tube.

. When using a picture tube test jig for service, ensure that jig is capable of handling 25.0 kV without causing X-Radiation.

OTE: It is important to use an accurate periodically calibrated high voltage meter.

. Set the brightness to minimum.

. Set the service switch to the SERVICE position.

. Measure the High Voltage. The meter reading should indicate 25.0 kV ± 1.5 kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

. To prevent an X-Radiation possibility, it is essential to use the specified tube.

MESSUNG DES KRIECHSTROMS IM EINGESCHALTETEN ZUSTAND (Siehe Abb. 1)

1. Den Netzstecker direkt in eine Netzsteckdose stecken. Für diese Messung keinen Trenntransformator verwenden.
2. Einen 2 kΩ/10 W-Widerstand in Serie mit einem von außen zugänglichen Metallteil am Fernsehgerät und einer guten, Erdung z.B. Wasserleitung, anschließen.
3. Ein Wechselstrom-Voltmeter mit einmen Meßbereich von 1000 Ohm/Volt oder größer verwenden, um die Spannung über den Widerstand zu messen.
4. Jedes zugänglich Metallteil prüten, und an jedem Punkt die Spannung messen.
5. Den Netzstecker umgekehrt in die Steckdose stecken und jede der obigen Messungen wiederholen.
6. Die Spannung darf an keinem, der Punkte 1.4 V eff. überschreiten. Wird dieser Wert nicht eingehalten, besteht die Gefahr eines elektrischen Schlages, und das Fernsehgerät sollte daher repariert und nachgeprüft werden, bevor es an den Kunden zurückgegeben wird.

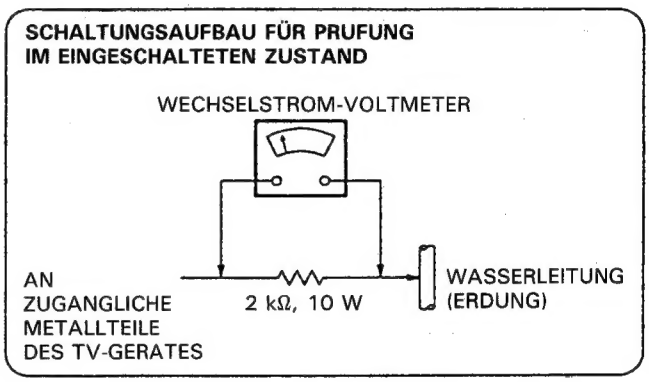


Abb. 1

RÖNTGENSTRAHLUNG

ACHTUNG:

1. Potentielle Quellen von Röntgenstrahlung in Fernsehgeräten sind das Hochspannungsteil und die Bildröhre.
2. Bei Verwendung eines Bildröhren-Prüfgerätes für den Service ist sicherzustellen, daß es für die Belastung von 25.0 kV geeignet ist, ohne daß eine Röntgenstrahlung verursacht wird.

ANMERKUNG: Es ist wichtig, daß ein präzises, regelmäßig geprüftes Voltmeter verwendet wird.

1. Helligkeit auf Minimum stellen.
2. Den Service-Schalter in die "SERVICE"-Position stellen.
3. Die Hochspannung messen. Die Anzeige des Instrumentes sollite 25.0 kV ± 1.5, betragen. Falls die Anzeige diese Toleranzgrenzen überschreitet, ist sofortige die Behebung nötig, um die Möglichkeit vorzeitigen Komponentenausfalls zu verhüten.
4. Um die Möglichkeit von Röntgenstrahlung zu begrenzen, ist es wichtig, daß nur die vorgeschriebene Bildröhre verwendet wird.

SHUT DOWN CIRCUIT TEST

This test must be made as a final check before the set is returned to the customer.

1. With the rear cover removed, supply nominal 220 V AC to the set, turn on the power switch.
2. Receive a Philips pattern.
3. Supply - 45 V DC to TPE7, and confirm that the shut down circuit does not operate.
4. Supply - 65 V DC to TPE7, and confirm that the shut down circuit operates.

TEST KURZSCHLUSS-SICHERHEITSSCHALTUNG

Dieser Test muß als letzte Prüfung vor der Rückgabe des Gerätes an den Kunden durchgeührt werden.

1. Bei abgenommener Rückwand ist dem Gerät 220 V Nennspannung zuzuführen, und der Geräteschalter einzuschalten.
2. Ein Philips-Muster empfangen.
3. Gleichspannung von - 45 V an TPE7 einspeisen und sicherstellen, daß die Kurzschluß-Sicherheitsschaltung nicht anspricht.
4. Gleichspannung von - 65 V an TPE7 einspeisen und sich vergewissern, daß die Kurzschluß-Sicherheitsschaltung jetzt anspricht.

LOCATION OF CONTROLS

KONTROLLANLAGE

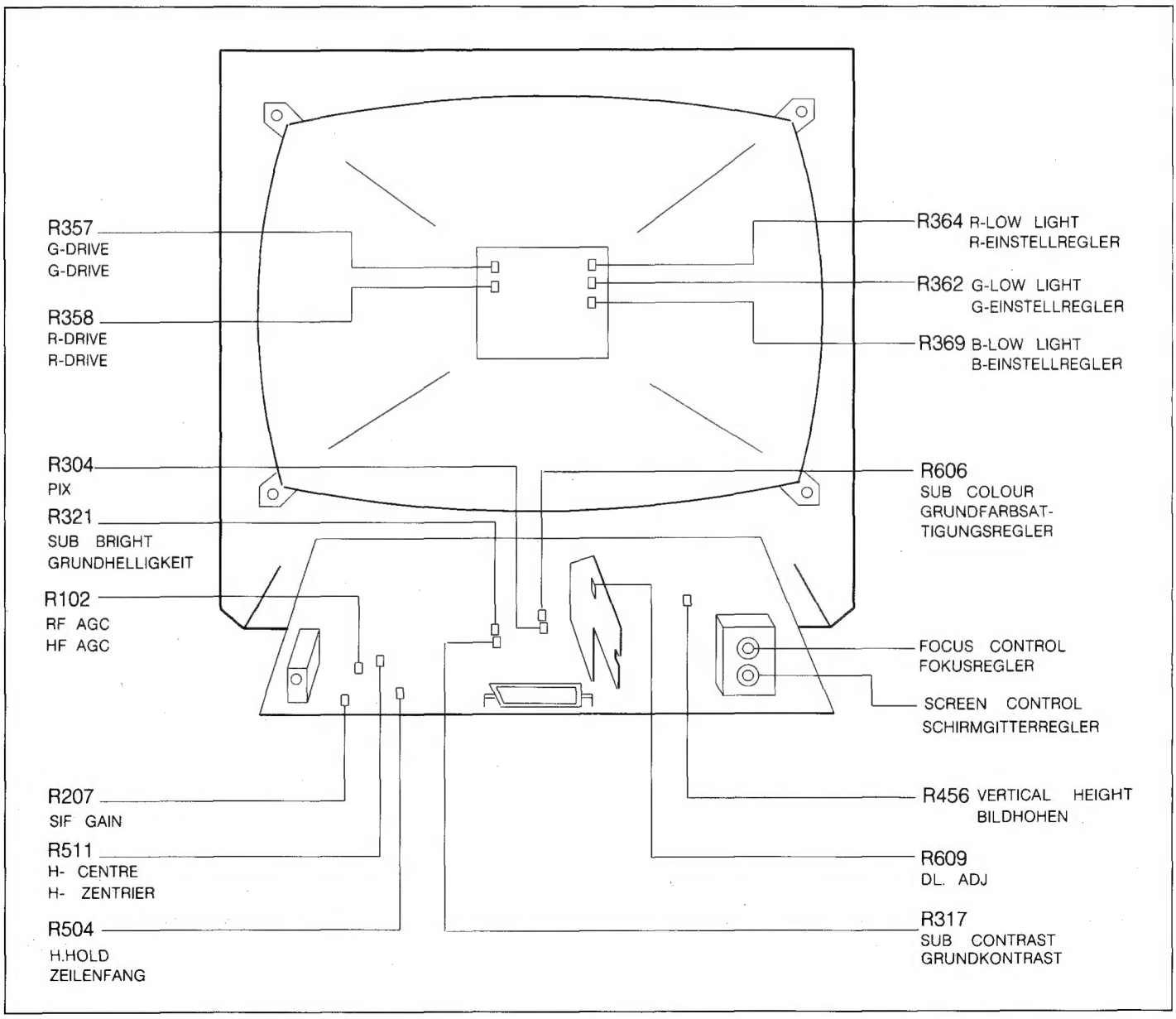


Fig. 2 Abb. 2

SERVICE HINTS

Removal of E-Board

Note:

If the following procedure is not carried out, damage may occur to E-Board when attempting removal.

1. Using a small screwdriver release the Pcb retaining clip (A) as shown in fig. 3 and 4.
2. To remove the Pcb from the cabinet, lift the Pcb and pull backwards see fig. 5.

WARTUNGSHINWEISE

Ausbau der E-Platine hinweis

Die folgenden hinweis unbedingt beachten, um beschädigungen dere-platine zu vermeiden.

1. Mit einem schmalen schraubendreher den platinenhelter (A) nach oben drücken, wie in Abb. 3 und 4 gezeigt.
2. Die platine anhaben und aus dem gehäuse herausziehen, wie in Abb. 5 gezeigt.

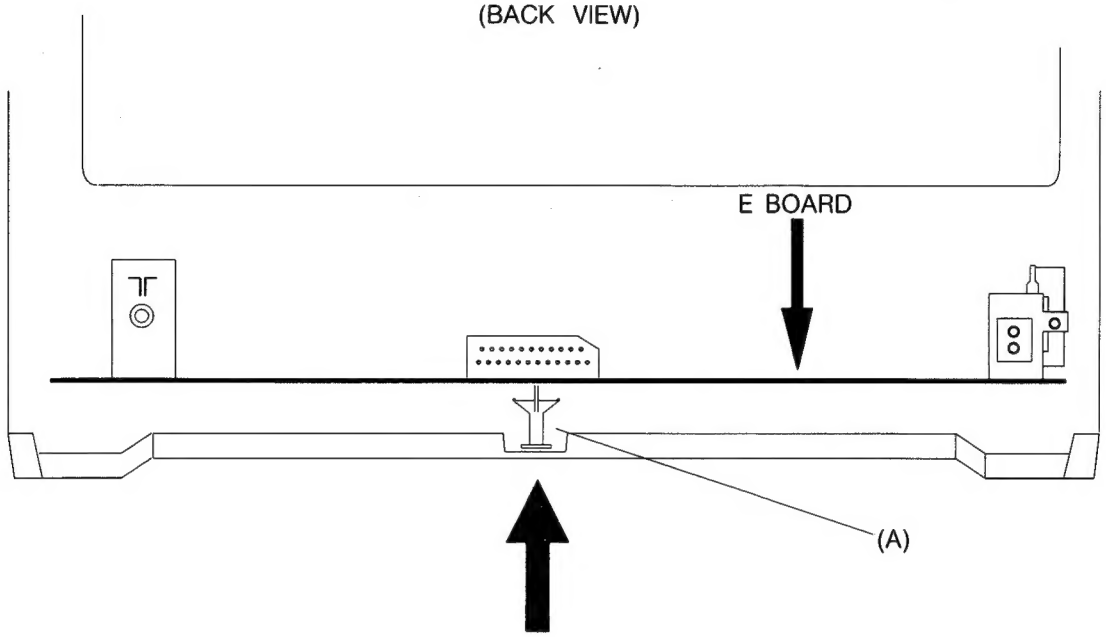


Fig. 3 Abb. 3

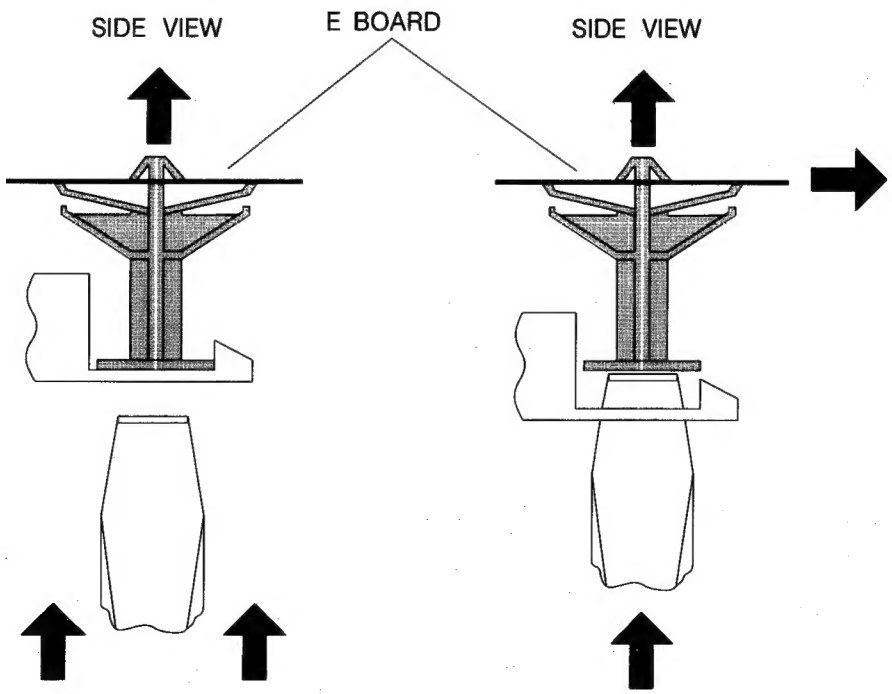


Fig. 4 Abb. 4

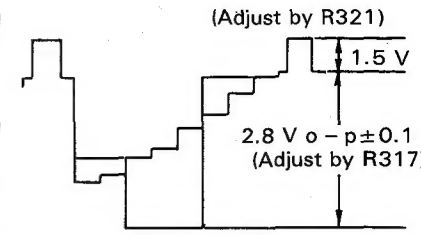
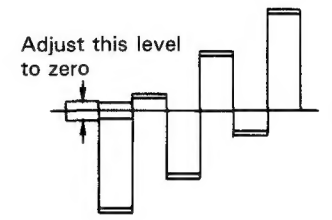
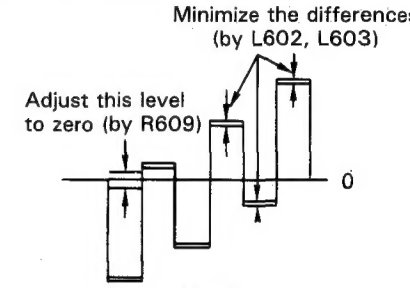
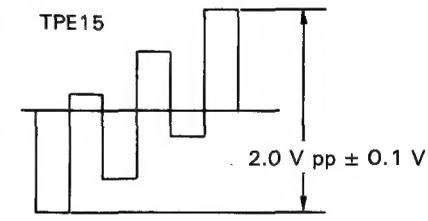
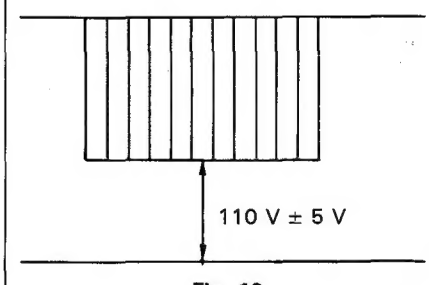
Fig. 5 Abb. 5

ADJUSTMENTS

ITEM/PREPARATION	ADJUSTMENT PROCEDURE
B VOLTAGE 1. Operate the TV set. 2. Set controls: Bright . . . . . minimum Contrast . . . . . minimum Sub-Bright . . . . . minimum	1. Confirm the indicated test points for the specified voltage. TPE1: 118.7 ± 1.5 V TPE5: 12.0 ± 1.0 V TPE2: 5.0 ± 1 V TPE10: 187 ± 10.0 V TPE3: 25.6 ± 2.0 V TPE12: 8.8 ± 1.0 V TPE4: 16.0 ± 1.0 V
AFC 1. Operate the TV set. 2. Set a channel in UHF band. 3. Supply 38.9 MHz continuous wave to TP of Tuner. 4. Connect a DVM to TPE22.	1. Adjust L102 so that voltage at TPE22 becomes 6.0 ± 0.3 V. 2. Change the frequency and confirm the voltage as shown below. +100 kHz: less than 5.0 V −100 kHz: more than 7.0 V
RF AGC 1. Receive a colour bar pattern. 2. Set the input level to 66 dB ± 2 dB (75Ω open). 3. Connect an oscilloscope to TPE9 with DC mode.	1. Turn RF AGC control (R102) fully clockwise. 2. Slowly turn R102 counterclockwise to set it at the point just before voltage at TPE9 drops.
HIGH VOLTAGE 1. Operate the TV set. 2. Set controls: Bright . . . . . minimum Contrast . . . . . minimum Sub-Bright . . . . . minimum	1. Confirm that the high voltage is within a range of 25.0 kV + 1.5 kV, −1.5 kV. **Note:** If the high voltage is out of tolerance, confirm that voltage at zero beam current (Bright, Contrast and Colour controls to their minimum positions) is within the above tolerance.
TELETEXT CLOCK 1. Operate the TV set and confirm the +B voltage. 2. Connect a frequency counter to TPT6. 3. Earth TPT5.	1. Adjust C3528. Reading of the counter: 6.01 MHz ± 200 Hz.

JUSTIERUNGEN

ABGLEICHPUNKTE UND VORBEREITUNG	JUSTIERUNG
VERSORGUNGSSPANNUNG B 1. TV einschalten. 2. Die Regler wie folgt einstellen: Helligkeit . . . . . minimum Kontrast . . . . . minimum Grundhelligkeitsregler . minimum	1. Die Messungen an den Testpunkten sollen folgende Betriebsspannungen ergeben. TPE1: 118.7 ± 2.0 V TPE2: 5.0 ± 1.0 V TPE3: 25.6 ± 2.0 V TPE4: 16.0 ± 1.0 V TPE5: 12.0 ± 1.0 V TPE10: 187 ± 10.0 V TPE12: 8.8 ± 1.0 V
AFC 1. TV einschalten. 2. Kanal im UHF-Bereich wählen. 3. Meßsender auf 38.9 MHz einstellen und an den Tuner-Testpunkt anschließen. 4. DVM an TPE22 anschließen.	1. Spule L102 so abgleichen, daß die Gleichspannung am TPE22 6.0 V ± 0.1 V beträgt. 2. Die Frequenz ändern, und die Spannung wie folgt kontrollieren: +100 kHz: Kleiner als 5 V −100 kHz: Größer als 7.0 V
RF AGC 1. Empfang eines Farbbalken - Testbildes. 2. Das Eingangssignal soll mit 66 dB ± 2 dB (75Ω eingespeist werden). 3. Oszilloskop an TPE9 in DC-Funktion anklemmen.	1. Der Regler RF AGC (R102) ist auf Rechtsanschlag zu stellen. 2. Den Regler R102 so einstellen, daß er kurz vor dem Punkt steht, an dem der Messwert an TPE9 absinkt.
HOCHSPANNUNG 1. TV einschalten. 2. Die Regler wie folgt einstellen: Helligkeit . . . . . minimum Kontrast . . . . . minimum Grundhelligkeitsregler . minimum	1. Die Hochspannung darf bei 25.0 kV eine Toleranz von + 1.5 kV und −1.5 kV haben. **Anmerkung:** Falls die Hochspannung außerhalb der Toleranz liegt, bitte bei minimaler Helligkeit, Kontrast und Farbsättigung prüfen, ob sie innerhalb der Toleranz ist.
VIDEOTEXT-CLOCK-OSZILLATOR 1. TV einschalten und Betriebsspannung +B prüfen. 2. Frequenzzähler an TPT6 anschließen. 3. TPT5 auf Masse klemmen.	1. C3528 einstellen, Ablesung des Zählers: 6.01 MHz ± 200 Hz.

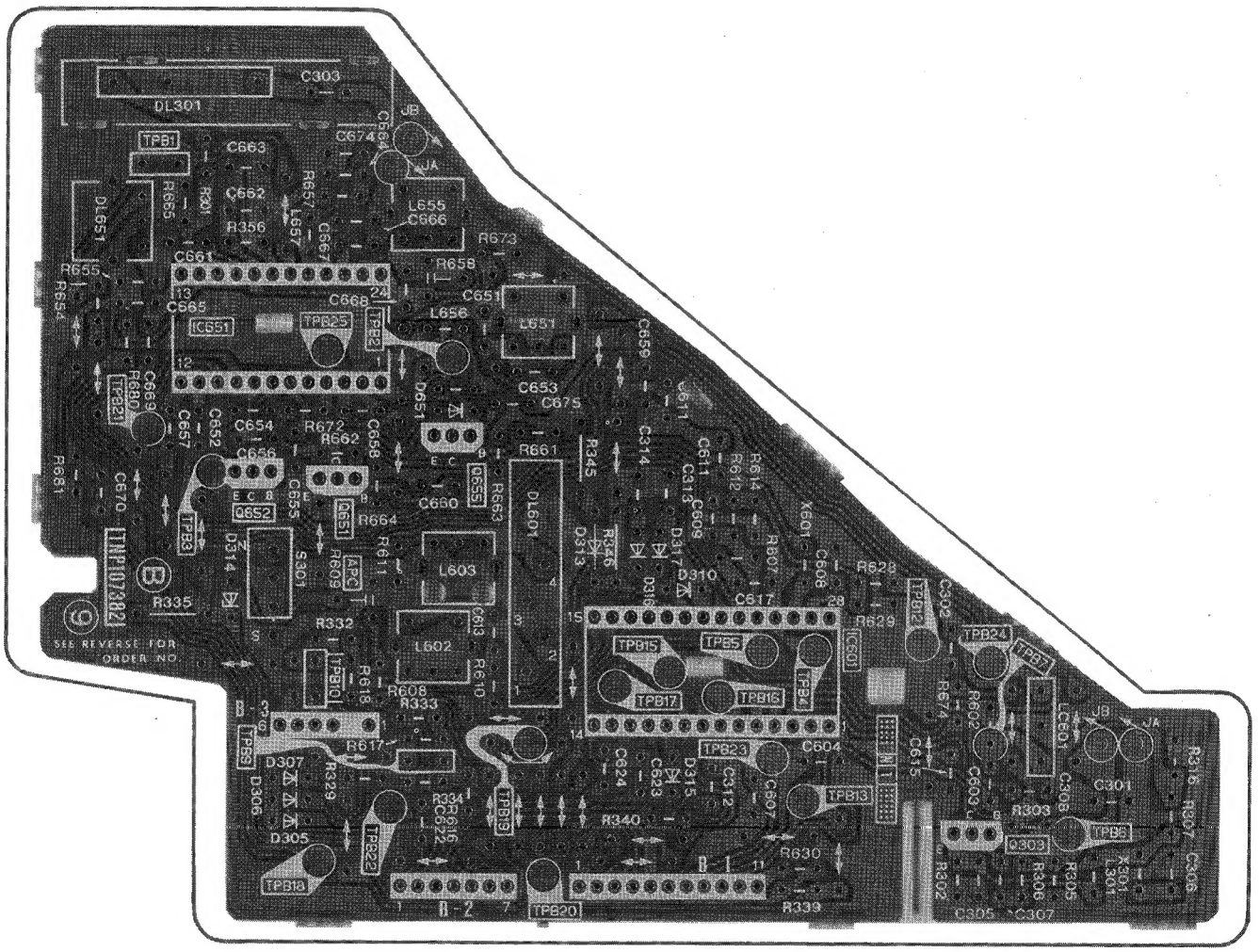
ITEM/PREPARATION	ADJUSTMENT PROCEDURE	WAVEFORM
SUB CONTRAST 1. Receive a colour bar pattern (Philips). 2. Connect an oscilloscope to TPE15. 3. Set controls: Bright . . . . . minimum Contrast . . . . . maximum Colour . . . . . minimum Picture . . . . . centre	1. Adjust Sub-Bright (R321) for 1.5 V higher than black level. 2. Connect link between TPE7 and earth. Adjust sub-contrast (R317) for 2.8 V p-p. 3. Remove link from TPE7.	 Fig. 6
PAL APC 1. Receive a PAL colour bar pattern. 2. Connect jumper between TPE4 and TPE5, TPB13 and TPB15. 3. Connect oscilloscope to TPE9.	1. Adjust APC trimmer (C610) to obtain stationary or slowly moving colour bars as Fig. 7. 2. Remove link and confirm colour bars are stationary.	 Fig. 7
PAL DELAY LINE 1. Receive a PAL colour bar pattern. 2. Connect a 100Ω resistor across TPB6 and ground. 3. Connect an oscilloscope to TPB9.	1. Adjust DL Adj. (R609) and DL Matching Trans. (L602, L603) to obtain waveform at TBP9 as shown in Fig. 8.	 Fig. 8
SUB COLOUR 1. Receive a PAL colour bar pattern. 2. Set controls: contrast . . . . . maximum bright . . . . . minimum picture . . . . . centre sub colour . . . . . centre 3. Connect an oscilloscope to TPE15.	1. Set colour DAC to centre. 2. Adjust sub colour (R606). For 2.0 V pp ± 0.1 V at TPE15 as shown in Fig. 9.	 Fig. 9
TELETEXT CONTRAST **Note:** Before this adjustment is attempted, white balance adjustment must be finished. 1. Receive a teletext signal. 2. Connect an oscilloscope to TPY1. 3. Set controls: bright . . . . . minimum contrast . . . . . maximum	1. Adjust R3514 to obtain the waveform as shown in Fig. 10.	 Fig. 10

ABGLEICHPUNKTE UND VORBEREITUNG	JUSTIERUNG	SIGNALFORM
GRUNDKONTRAST 1. Empfang eines Farbbalken - Testbildes (Philips). 2. Oszilloskop an Testpunkt TPE15. 3. Die Regler wie folgt einstellen: Helligkeit . . . . . minimum Kontrast . . . . . maximum Farbsättigung . . . . . minimum Bildschärfe . . . . . mittenstellung	1. Grundhelligkeit (R321) auf 1.5 V einstellen. 2. TPE7 mit Masse verbinden. Grundhelligkeit (R317) auf 2.8 Vss einstellen.	(Einstellen mit R321) 1.5 V 2.8 V ± 0.1 V (Einstellen mit R317) **Abb. 6**
PAL APC 1. Empfang eines PAL - Farbbalken - Testbildes. 2. Testpunkt TPE4 mit TPE5 verbinden und Testpunkt TPE13 mit TPE15 verbinden. 3. Oszilloskop an Testpunkt TPE9.	1. Trimmer C610 auf minimale Bewegung in den Farbbalken abgleichen (siehe Abb. 7). 2. Brücken entfernen und korrekte Farbbalkenfolge überprüfen.	Impuls auf nullinie bringen 0 **Abb. 7**
PAL-VERZÖGERUNGSLEITUNG 1. Empfang eines PAL - Farbbalken - Testbildes. 2. 100 ohm zwischen TPB6 und Masse einlöten. 3. Oszilloskop an Testpunkt TPB9.	1. Einstellungen mit den Reglern DL Adj. (R609) und der Spule DL Matching Trans. (L602, L603) so vornehmen, daß die Signalform, an Testpunkt TPB9 erreicht wird, wie Abb. 8 dargestellt TPB9.	Minimum der differenzen (mit L602, L603) Impuls auf nullinie bringen mit (R609) 0 **Abb. 8**
GRUNDFARBSÄTTIGUNGS-REGLER Grundeinstellung Farbsättigung (SUB CONTRAST) 1. Farbbalkentestbild empfangen. 2. Kontrast . . . . . maximum Helligkeit . . . . . minimum Konturz. (PICTURE) . . . . . mitte R606 (SUB-COLOUR) . . . . . mitte 3. Oszillograph an TPE15 anschliessen.	1. Den Farbsättigungsregler auf Mitte einstellen. 2. 100Ω zwischen TPE6 und Masse einlöten. 3. An TPE15 mit R606 (SUB-COL.) 2.0 Vss ± 0.1 V einstellen.	TPE15 2.0 Vss ± 0.1 V **Abb. 9**
VIDEOTEXT-KONTRAST **Anmerkung:** Vor dieser Einstellung muß die des Weißabgleiches abgeschlossen sein. 1. Videotextsignal empfangen. 2. Oszilloskop an Testpunkt TPY1. 3. Die Regler wie folgt einstellen: Helligkeit . . . . . minimum Kontrast . . . . . maximum	1. Mit dem R3514 die Signalform nach Abb. 10.	110 V ± 5 V 0 **Abb. 10**

CONDUCTOR VIEW
B-BOARD TNP 107382AC

ANSICHT DER LEITERBAHNEN
PLATINE B TNP 107382AC

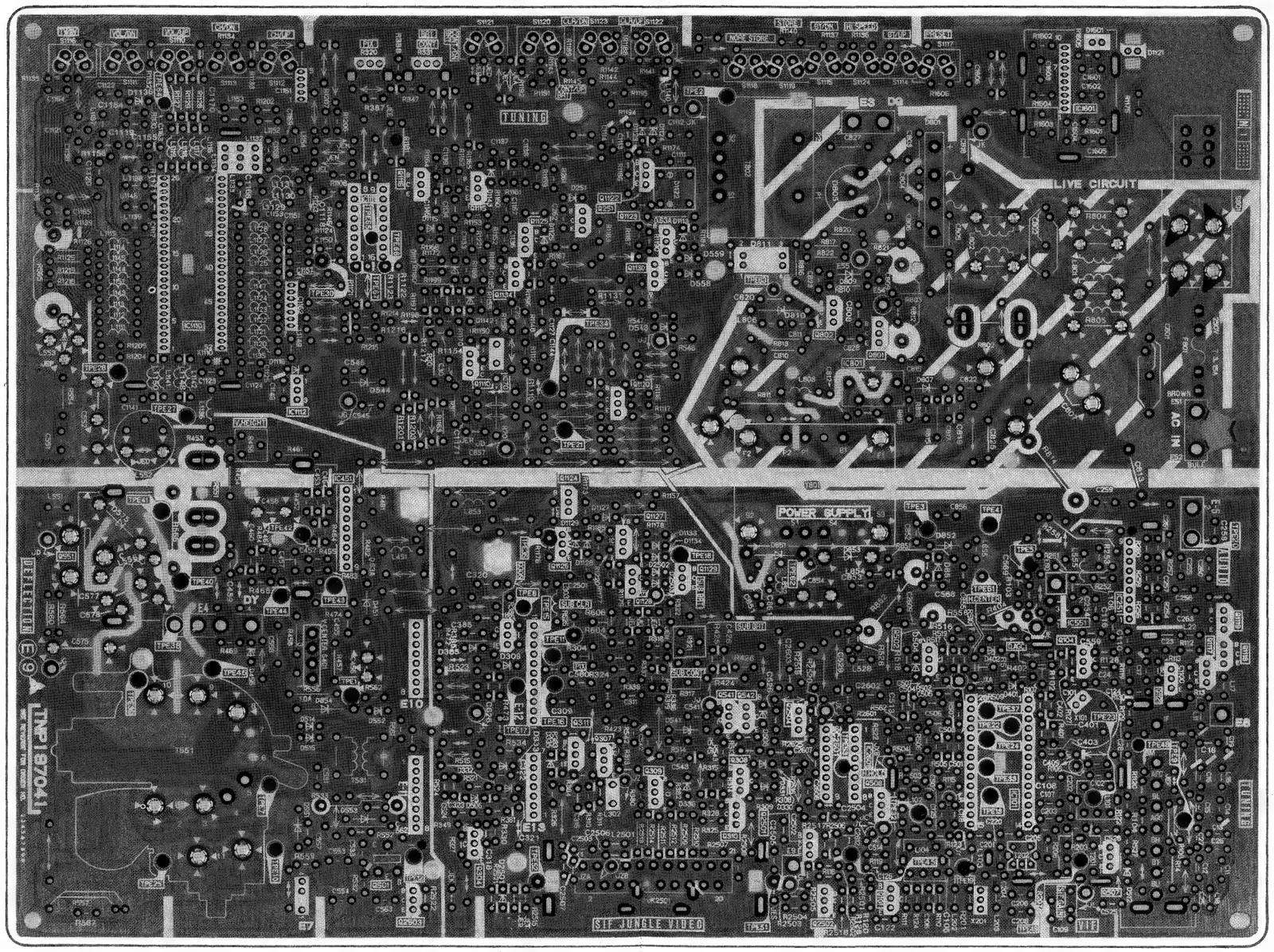
I.C.	IC651 IC601
TRANSISTOR	Q652 Q651 Q655 Q303
DIODES	D314 D307 D306 D305 D651 D313 D316 D317
TEST POINTS	TPB1 TPB21 TPB3 TPB25 TPB2 TPB18 TPB9 TPB22 TPB19 TPB20 TPB15 TPB17 TPB16 TPB5 TPB4 TPB23 TPB13 TPB12 TPB24 TPB7 TPB6



E-BOARD TNP 197041AF

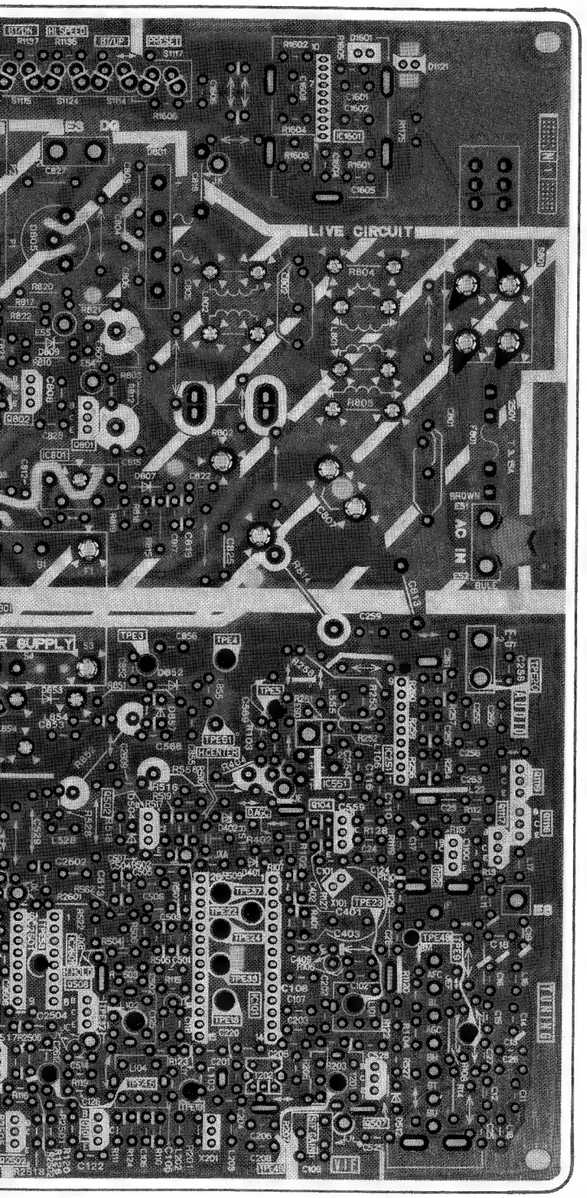
PLATINE E TNP 197041AF

I.C.'s	IC1110 IC1111 IC1112 IC451 IC70 IC2601 IC801 IC1601 IC101 IC551 IC251
TRANSISTORS	Q551 Q1116 Q1116 Q1122 Q1123 Q1117 Q1110 Q1125 Q251 Q1120 Q1130 Q541 Q542 Q802 Q801 Q104 Q1119 Q1134 Q1124 Q1127 Q1128 Q1129 Q2504 Q1121 Q1117 Q1118 Q1126 Q308 Q507 Q501 Q2503 Q304 Q311 Q307 Q309 Q310 Q2501 Q2502 Q101
DIODES	D1136 D575 D1116 D551 D854 D514 D515 D451 D552 D1115 D1143 D1142 D309 D385 D506 D333 D332 D335 D1129 D1128 D2501 D1125 D1127 D1113 D558 D1133 D559 D1134 D2502 D336 D811 D810 D851 D508 D330 D331 D809 D853 D801 D807 D852 D401 D1601 D1121 D512
TEST POINTS	TPE1 TPE10 TPE12 TPE15 TPE17 TPE16 TPE2 TPE3 TPE4 TPE5



PLATINE E TNP 197041AF

IC1601
IC801
IC2601 IC101 IC551 IC251
Q802 Q801 Q104 Q1119
Q2504 Q1121 Q1117 Q1118
Q507
Q2501 Q2502 Q101
D809 D801 D401 D1601 D1121
D853 D807
D852 D512
TPE3 TPE4 TPE5



SCHEMATIC DIAGRAM FOR MODEL TC-1785DRS (Z3T Chassis)

ZEICHENERKLÄRUNG FÜR MODELL TC-1785DRS (Z3T Chassis)

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Wichtiger Sicherheitsinweis

Teile, die mit einen Hinweis ⚠ gekennzeichnet sind, sind wichtig für die Sicherheit. Sollte ein Auswechseln erforderlich sein, sind unbedingt Originalteile einzusetzen.

NOTES:

1. RESISTOR
   All resistors are carbon 1/4W resistor, unless marked as follows:
   Unit of resistance is OHM (Ω) (K = 1,000, M = 1,000,000).
   - O : Nonflammable
   - △ : Solid
   - ⊠ : Wire Wound
   - ⊠ : Metal Oxide
   - ◎ : Metal Film
   - Ⓧ : Fuse
2. CAPACITOR
   All capacitors are ceramic 50 V capacitor, unless marked as follows:
   Unit of capacitance is μF, unless otherwise noted.
   - Ⓧ : Temperature Compensation
   - Ⓜ : Polyester
   - ⓜ : Metalized Polyester
   - ⊠ : Polypropylene
   - : Electrolytic
   - : Bipolar
   - Ⓣ : Dipped Tantalum
   - Ⓩ : Z-Type
3. COIL
   Unit of inductance is μH, unless otherwise noted.
4. Components marked "Ⓛ" on the schematic diagram shows lead-less parts.
5. TEST POINT
   ⚲ : Test Point position
6. EARTH SYMBOL
   ⏚ : Chassis Earth (Cold) ⊥ : Line Earth (Hot)
7. VOLTAGE MEASUREMENT
   Voltage is measured by a DC voltmeter.
   Conditions of the measurement are the following:
   Power Source . . . . . 220 V AC, 50 Hz
   Receiving Signal . . . . . Colour Bar signal (RF)
   All the other customer's controls . . . . . maximum
8. ⟶ : Indicates the major signal flow.
9. This schematic diagram is the latest at the time of printing and subject to change without notice.

REMARKS:

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection. The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions. All circuits, except the Power Circuit, are cold.

Precautions

a. Do not touch the hot part or the hot and cold parts at the same time as you are liable to a shock hazard.
b. Do not short-circuit the hot and cold circuits as electrical components may be damaged.
c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously, as this may cause fuse failure. Connect the earth of instruments to the earth connection of the circuit being measured.
d. Make sure to disconnect the power plug before removing the chassis.

ANMERKUNG:

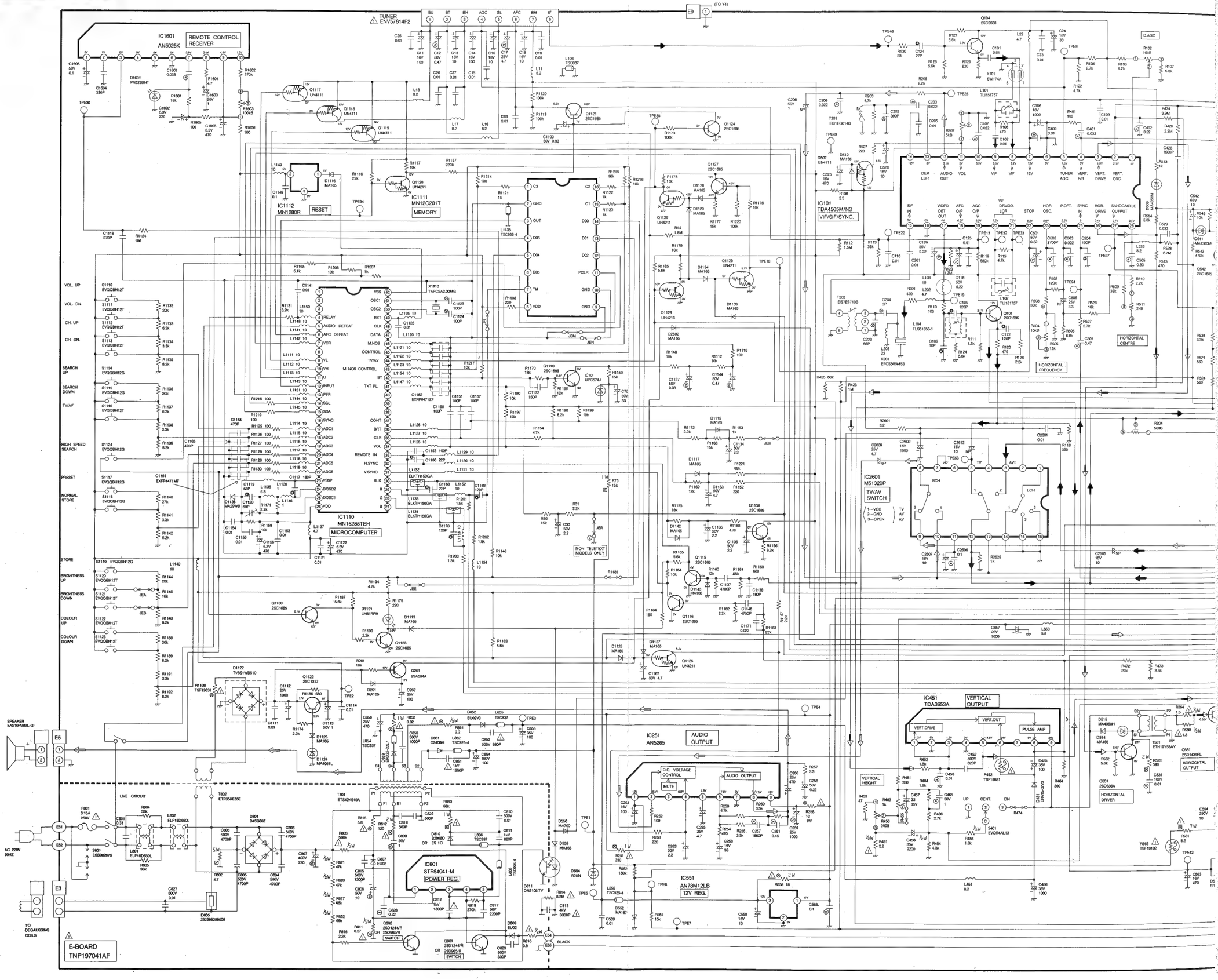
1. WIDERSTÄNDE
   Alle 1/4 Watt Widerstände sind Kohlewiderstände, Abweichungen sind wie folgt gekennzeichnet:
   Die Maßeinheit ist OHM (Ω) (K = 1,000, M = 1,000,000).
   - O : Nicht brennbar
   - △ : Lastwiderstand
   - ⊠ : Draht
   - ⊠ : Metall Oxyd
   - ◎ : Metall Film
   - Ⓧ : Sicherung
2. KONDENSATOREN
   Alle Kondensatoren sind Keramikausfürungen.
   Spannungsfestigkeit 50 V, Abweichungen sind wie folgt gekennzeichnet.
   Die Maßeinheit ist μF, wenn keine anderen Bezeichnungen genannt sind.
   - Ⓧ : Temperatur Kompensation
   - Ⓜ : Polyester
   - ⓜ : Metallisches Polyester
   - ⊠ : Polypropylen
   - : Elektrolyt
   - : Bipolar
   - Ⓣ : Tantal
   - Ⓩ : Z-Typ
3. SPULEN
   Die Maßeinheit ist μH, Abweichungen sind gekennzeichnet.
4. Mit "Ⓛ" gekennzeichnete Teile sind ohne Anschlußdrähte.
5. TESTPUNKTE
   ⚲ : Kennzeichnung der Testpunktposition.
6. MASSESYMBOL
   ⏚ : Erdung am Chassis (kalt) ⊥ : Erdung an Masse-Leitung
7. SPANNUNGSMESSUNG
   Spannungsmessungen sind mit einem DC-Voltmeter durchzuführen.
   Die Meßbedingungen sind folgende:
   Netzspannung . . . . . 220 V/50 Hz
   Wiedergabe Signal . . . . . Farbbalken-Testbild
   Alle übrigen Einstellungen für Benutzer . . . . . Sollangaben
8. ⟶ : Kennzeichnung zur Signalverfolgung.
9. Anderungen im Laufe der Fertigung sind möglich.

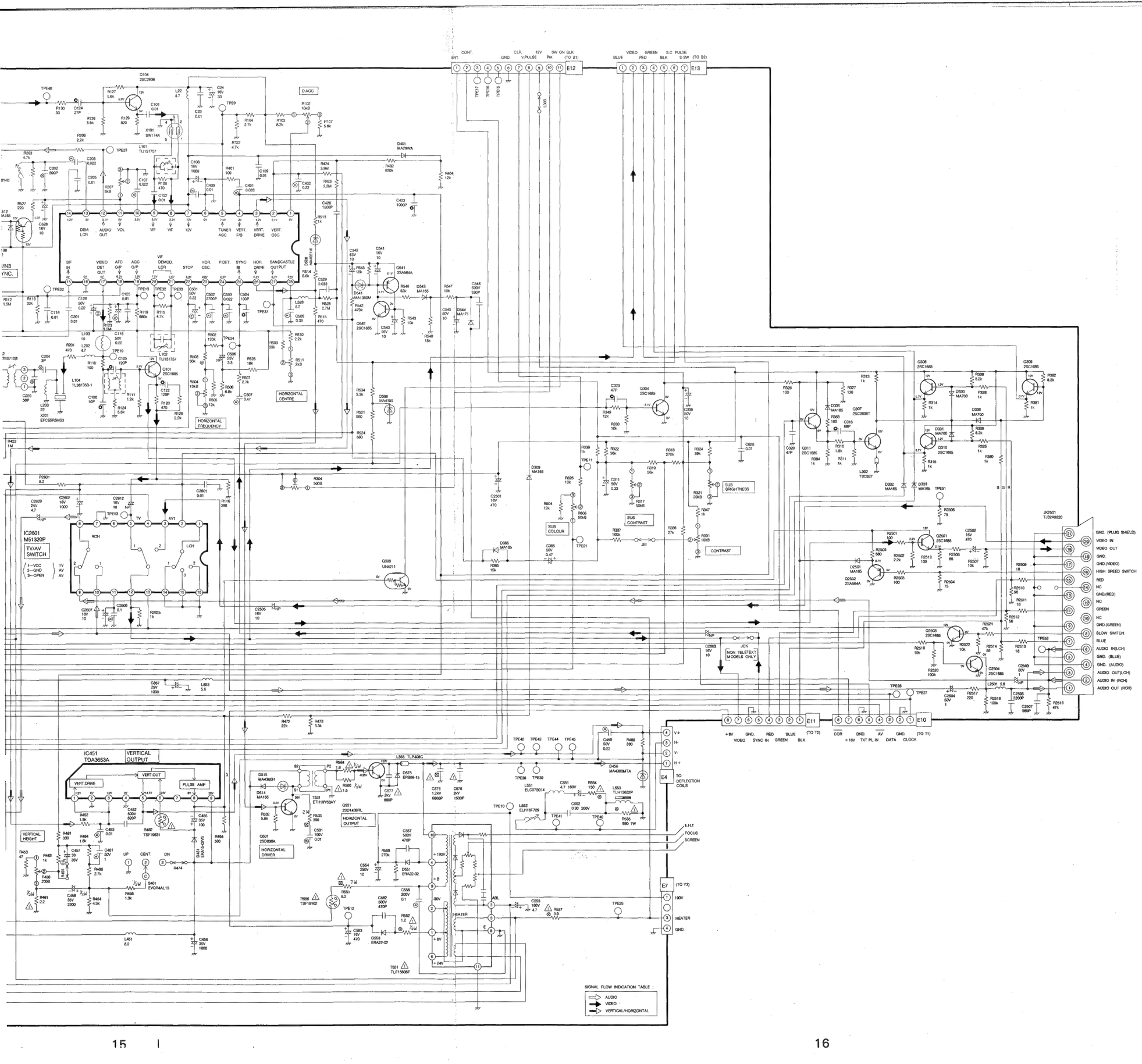
BEMERKUNGEN:

1. Die Starkstromkreis enthält eine Gruppe der Stromkreise die gesonderte Stromquelle bzw. Masse haben. Die Stromkreise sind im Schaltplan mit "HOT" (heiß) und "COLD" (kalt) gekennzeichnet. Folgende Vorsichtsmaßregein treffen. Alle Stromkreise außer der Starkstromkreis sind kalt.

Vorsichtsmaßregeln

a. Weder die Leitung im heißen Bereich noch gleichzeitig die Leitungen im heißen und im kalten Bereich berühren. Sonst besteht die Gefahr des elektrischen Schlags.
b. Keinesfalls die Leitungen im heißen bzw. im kalten. Bereich miteinander kutzschließen. Sonst kann eine Sicherung durchbrennen und die Komponente können beschädigt werden.
c. Kein Instrument, z.B. ein Oszilloskop, gleichzeitig an der Leitungen im heißen bzw. kalten Bereich anschließen. Sonst kann eine Sicherung durchbrennen. Die Erde des instruments mit der des zu Prüfenden Schaltkreises verbinden.
d. Vor dem Ausbau des Gehäuses sich vergewissern, daß der Netzstecker ausgezogen ist.

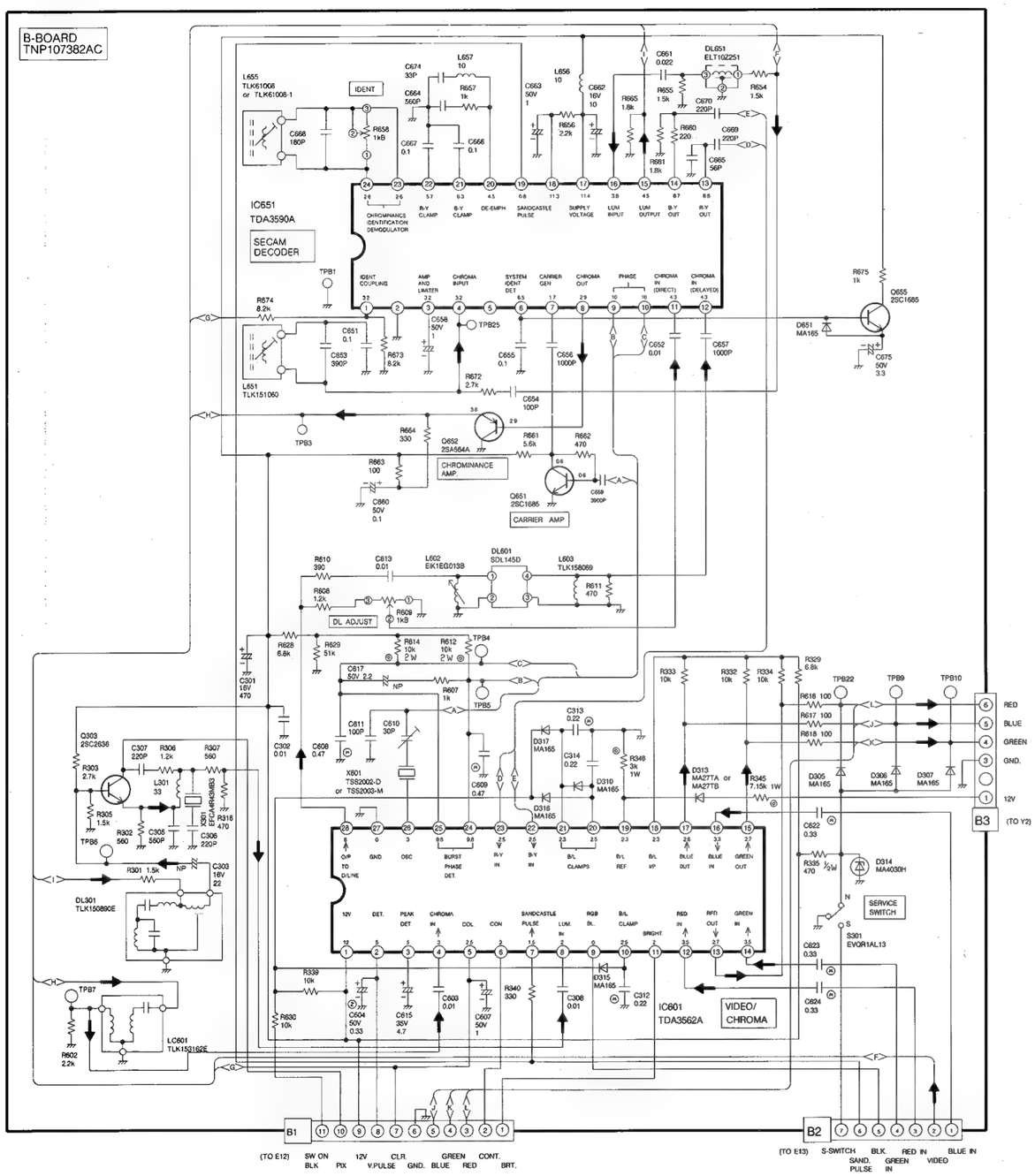

IC1601
AN5025K
REMOTE CONTROL RECEIVER
TUNER
ENV57814F2
IC1112
MN1280R
RESET
IC1111
MN12C201T
MEMORY
IC1110
MN15285TEH
MICROCOMPUTER
IC101
TDA4505M/N3
VIF/SIF/SYNC.
IC2601
M51320P
TV/AV SWITCH
IC251
AN5265
AUDIO OUTPUT
IC451
TDA3653A
VERTICAL OUTPUT
IC551
AN78M12LB
12V REG.
IC801
STR54041-M
POWER REG.
E-BOARD
TNP197041AF
NON TELETEXT MODELS ONLY
LIVE CIRCUIT
VOL. UP
VOL. DN.
CH. UP
CH. DN.
SEARCH UP
SEARCH DOWN
TV/AV
HIGH SPEED SEARCH
PRESET
NORMAL STORE
STORE
BRIGHTNESS UP
BRIGHTNESS DOWN
COLOUR UP
COLOUR DOWN
SPEAKER
AC 220V 50HZ
TO DEGAUSSING COILS
HORIZONTAL CENTRE
HORIZONTAL FREQUENCY
HORIZONTAL OUTPUT
HORIZONTAL DRIVER
VERTICAL HEIGHT
D.AGC

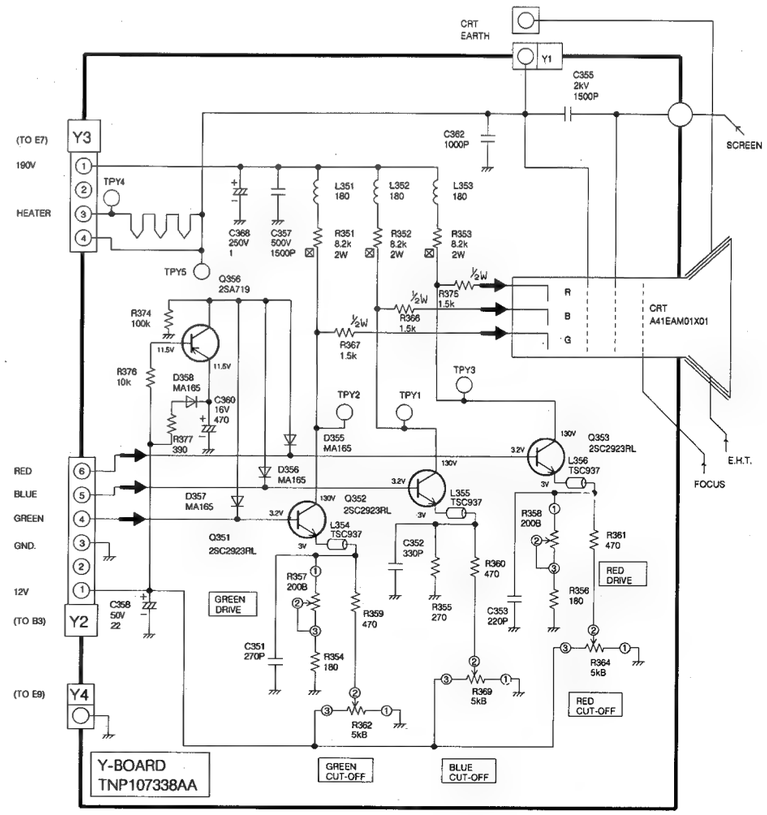

CONT. BRT.
CLR. GND.
12V V.PULSE
SW ON BLK PIX
(TO B1)
E12
VIDEO BLUE
GREEN RED
S.C BLK
PULSE S-SW
(TO B2)
E13
D.AGC
Q104 2SC2636
X101 SW174A
L101 TLI151757
IC2601 M51320P
TV/AV SWITCH
1—VCC
2—GND
3—OPEN
RCH
LCH
TV
AV1
AV
IC451 TDA3653A
VERTICAL OUTPUT
VERT.DRIVE
VERT.OUT
PULSE AMP
VERTICAL HEIGHT
HORIZONTAL FREQUENCY
HORIZONTAL DRIVER
HORIZONTAL OUTPUT
HORIZONTAL CENTRE
SUB BRIGHTNESS
SUB CONTRAST
SUB COLOUR
CONTRAST
NON TELETEXT MODELS ONLY
TO DEFLECTION COILS
E.H.T
FOCUS
SCREEN
HEATER
SIGNAL FLOW INDICATION TABLE :
AUDIO
VIDEO
VERTICAL/HORIZONTAL
JK2501 TJB2A8020
GND. (PLUG SHIELD)
VIDEO IN
VIDEO OUT
GND.
GND.(VIDEO)
HIGH SPEED SWITCH
RED
NC
GND.(RED)
NC
GREEN
NC
GND.(GREEN)
SLOW SWITCH
BLUE
AUDIO IN(LCH)
GND. (BLUE)
GND. (AUDIO)
AUDIO OUT(LCH)
AUDIO IN (RCH)
AUDIO OUT (RCH)

WAVEFORM PATTERN TABLE

SIGNALTABELLE

TPE19 2.4Vp-p (20uS)	TPT1 3Vp-p (20uS)	PIN 1 IC3501 1.7Vp-p (20uS)	PIN 4 T551 112Vp-p (20uS)	PIN 1 IC451 2.6Vp-p (5mS)	PIN 8 IC451 18Vp-p (5mS)
PIN 4 IC601 0.29Vp-p (20uS)	PIN 28 IC601 2Vp-p (20uS)	PIN 23 IC601 0.56Vp-p (20uS)	TPE42 40Vp-p (5mS)	PIN 5 T551 24Vp-p (20uS)	PIN 8 T551 20Vp-p (20uS)
PIN 22 IC601 0.36Vp-p (20uS)	PIN 8 IC601 4Vp-p (20uS)	PIN 3 IC101 3.2Vp-p (5mS)	TPB8 4.5Vp-p (20uS)	TPB9 4.8Vp-p (20uS)	TPB10 5.2Vp-p (20uS)
PIN 26 IC101 1.5Vp-p (20uS)	BASE Q551 15Vp-p (20uS)	TPE39 1050Vp-p (20uS)	TPY2 135Vp-p (20uS)	TPY1 145Vp-p (20uS)	TPY3 142Vp-p. (20uS)



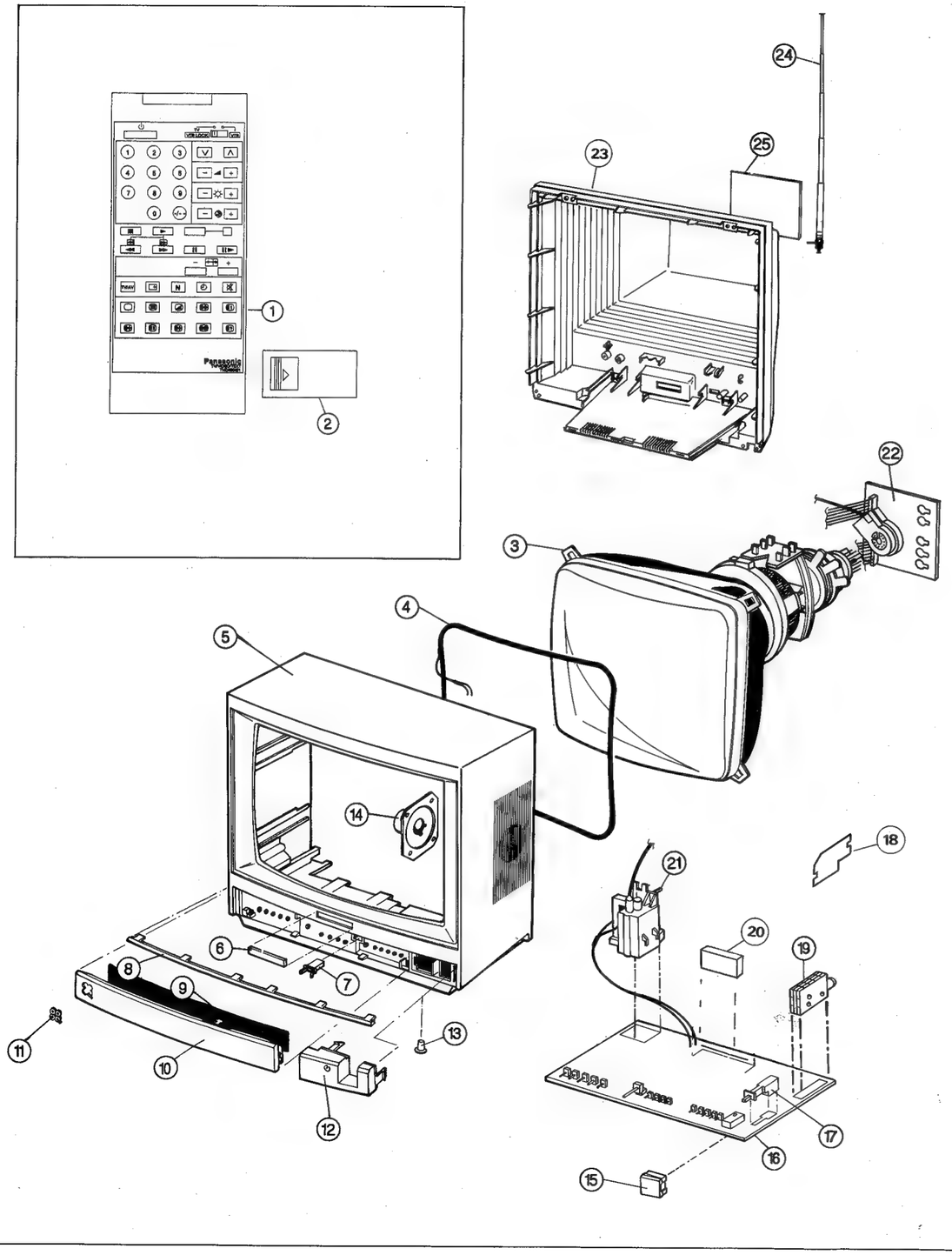


PARTS LOCATION

NOTE: The number on mechanical parts indicates Ref. No. of Replacement Parts List.

EXPLOSIONSZEICHNUNG

ANMERKUNG: Die Number auf den mechanism Teilen zeigt die Bezugsnummer der Ersatzteilliste an.



REPLACEMENTS PARTS LIST

Important Safety Notice

Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Description
MISCELLANEOUS COMPONENTS		
1)	TNQ8E0421	REMOTE CONTROL
2)	TEG37559-6	BATTERY COVER
3) ⚠	A41EAM01X01	C. R. T.
4) ⚠	TLK8E05107	DEGAUSSING COIL
5) ⚠	TKY181500	CABINET
6)	TBM173035	PANASONIC BADGE
7)	TEK17918	LID SWITCH
8)	TKR27710	SILVER TRIM
9)	TBM120632-2	PRESET LABEL
10)	TKP1810531	CONTROL PANEL LID
11)	TBM17461	QUINTRIX BADGE
12)	TKP1810541	SMOKED PANEL
13)	A2051	SET FEET
14)	EAS10P299L-G	SPEAKER
15)	TBX1888300	POWER BUTTON
16) ⚠	TNP197041AF	E PCB
17) ⚠	ESB99267S	ON OFF SWITCH
18) ⚠	TNP107382AC	B PCB
19) ⚠	ENV57814F2	TUNER
20) J2501	TJS2A9220	21 PIN TERMINAL
21) ⚠ T551	TLF15606F	F.B Transformer
22) ⚠	TNP107338AA	Y PCB
23) ⚠	TKU529201	REAR COVER
24)	TSA110004-1	MONO POLE AERIAL
25)	TBM120807	REAR COVER LABEL
	TKK188502	ANTENNA COVER
	TPC1850305	OUTER CARTON
	TPD191467	CUSHION (TOP)
	TPD192469	CUSHION (BOTTOM)
	TQB8E0432	INSTRUCTION BOOK
⚠	TSX3183-1	POWER LEAD
⚠	520-001	FUSE HOLDER
⚠ F801	195-3.15	FUSE
DL301	TLK150890E	LUMINANCE DELAY LINE
DL601	SDL145D	CHROMA DELAY LINE
DL651	ELT10Z251	SECAM DELAY LINE

CAPACITORS

C11	ECEA1EU101	ELECTROLYTIC 25V	100UF
C12	ECEA50ZR47	ELECTROLYTIC 50V	0.47UF
C13	ECEA1CU100	ELECTROLYTIC 16V	10UF
C14	ECEA1EU101	ELECTROLYTIC 25V	100UF
C15	ECKC1H103JB	CERAMIC 50V	10NF
C16	ECEA1CU100	ELECTROLYTIC 16V	10UF
C17	ECEA25Z4R7	ELECTROLYTIC 25V	4.7UF
C18	ECEA1CU100	ELECTROLYTIC 16V	10UF
C19	ECKC1H103JB	CERAMIC 50V	10NF
C23	ECKC1H103JB	CERAMIC 50V	10NF
C24	ECEA1CU330	ELECTROLYTIC 16V	33UF
C25	ECKC1H103JB	CERAMIC 50V	10NF
C26	ECKC1H103JB	CERAMIC 50V	10NF
C27	ECKC1H103JB	CERAMIC 50V	10NF
C28	ECKC1H103JB	CERAMIC 50V	10NF
C30	ECEA1HU2R2	ELECTROLYTIC 50V	2.2UF
C70	ECEA1HU330	ELECTROLYTIC 50V	33UF
C101	ECKC1H103JB	CERAMIC 50V	10NF
C102	ECKC1H103JB	CERAMIC 50V	10NF
C105	ECCR1H121J	CERAMIC 50V	120PF
C106	ECCR1H100J	CERAMIC 50V	10PF
C107	ECQM1H223JZ	PLASTIC FILM 50V	22NF
C108	ECEA1CU102	ELECTROLYTIC 16V	1000UF
C109	ECKC1H103JB	CERAMIC 50V	10NF
C116	ECKC1H103JB	CERAMIC 50V	10NF
C118	ECEA50ZR47	ELECTROLYTIC 50V	0.47UF
C122	ECCR1H121J	CERAMIC 50V	120PF
C124	ECCR1H270J	CERAMIC 50V	27PF
C128	ECKC1H103JB	CERAMIC 50V	10NF
C201	ECKC1H103JB	CERAMIC 50V	10NF

ERSATZTEILLISTE

Wichtiger Sicherheitshinwels

Teile, die mit einen Hinweis ⚠ gekennzeichnet sind, sind wichtig für die Sicherheit. Sollte ein Auswechseln erforderlich sein, sind unbedingt Originalteile einzusetzen.

Ref No.	Part No.	Description
C202	ECCR1H391J	CERAMIC 50V 390PF
C203	ECQM1H223JZ	PLASTIC FILM 50V 22NF
C204	ECCR1H030J	CERAMIC 50V 30PF
C205	ECKC1H103JB	CERAMIC 50V 10NF
C206	ECQM1H223JZ	PLASTIC FILM 50V 22NF
C208	ECEA1HN010	ELECTROLYTIC 50V 1UF
C220	ECCR1H560J	CERAMIC 50V 56PF
C254	ECEA1EU101	ELECTROLYTIC 25V 100UF
C255	ECEA1VU4R7	ELECTROLYTIC 35V 4.7UF
C256	ECEA1CU330	ELECTROLYTIC 16V 33UF
C257	ECQM1H182JZ	PLASTIC FILM 50V 1.8NF
C258	ECEA50ZR22	ELECTROLYTIC 50V 0.22UF
C259	ECEA1EU102	ELECTROLYTIC 25V 1000UF
C260	ECEA1EU471	ELECTROLYTIC 25V 470UF
C261	ECQV1H154JZ	PLASTIC FILM 50V 150NF
C262	ECEA1EU101	ELECTROLYTIC 25V 100UF
C263	ECEA1HU2R2	ELECTROLYTIC 50V 2.2UF
C301	ECEA1CU471	ELECTROLYTIC 16V 470UF
C302	ECKC1H103JB	CERAMIC 50V 10NF
C303	ECEA1CN220	ELECTROLYTIC 16V 22UF
C305	ECKC1H561J	CERAMIC 50V 560PF
C306	ECCR1H221J	CERAMIC 50V 220PF
C307	ECCR1H221J	CERAMIC 50V 220PF
C308	ECKC1H103JB	CERAMIC 50V 10NF
C309	ECEA1HU100	ELECTROLYTIC 50V 10UF
C311	ECEA1HU3R3	ELECTROLYTIC 50V 3.3UF
C312	ECQV1H224JZ	PLASTIC FILM 50V 220NF
C313	ECQV1H224JZ	PLASTIC FILM 50V 220NF
C314	ECQV1H224JZ	PLASTIC FILM 50V 220NF
C316	ECCR1H680J	CERAMIC 50V 68PF
C320	ECCR1H470J	CERAMIC 50V 47PF
C323	ECCR1H470J	CERAMIC 50V 47PF
C351	ECCR1H271J	CERAMIC 50V 270PF
C352	ECCR1H331J	CERAMIC 50V 330PF
C353	ECCR1H221J	CERAMIC 50V 220PF
C355	ECKC3D152J	CERAMIC 2.0KV ⚠ 1.5NF
C357	ECKC2H152J	CERAMIC 500V 1.5NF
C358	ECEA1HU220	ELECTROLYTIC 50V 22UF
C360	ECEA1CU471	ELECTROLYTIC 16V 470UF
C362	ECKC1H102J	CERAMIC 50V 1.0NF
C368	ECEA2EU010	ELECTROLYTIC 250V 1UF
C385	ECEA50ZR47	ELECTROLYTIC 50V 0.47UF
C401	ECQM1H333JZ	PLASTIC FILM 50V 33NF
C402	ECQV1H224JZ	PLASTIC FILM 50V 220NF
C403	ECKC1H102J	CERAMIC 50V 1NF
C404	ECKC1H222JB	CERAMIC 50V 2.2NF
C409	ECQM1H103KZ	PLASTIC FILM 50V 10NF
C426	ECKC1H152J	CERAMIC 50V 1.5NF
C452	ECKC2H821J	CERAMIC 500V 820PF
C453	ECKC1H103JB	CERAMIC 50V 10NF
C455	ECEA1VU101	ELECTROLYTIC 35V 100UF
C456	ECEA1VU102	ELECTROLYTIC 35V 1000UF
C457	ECEA1EFS330	ELECTROLYTIC 25V 300UF
C458	ECEA1VU222	ELECTROLYTIC 35V 2200UF
C459	ECQV1H224JZ	PLASTIC FILM 50V 220NF
C461	ECQV1H105JZ	PLASTIC FILM 50V 1UF
C501	ECEA50ZR22	ELECTROLYTIC 50V 0.22UF
C502	ECQM1272GZ	PLASTIC FILM 100V 2.7nf
C503	ECQM1H223JZ	PLASTIC FILM 50V 22NF
C504	ECCR1H101J	CERAMIC 50V 100PF
C505	ECQV1H334JZ	PLASTIC FILM 50V 330NF
C506	ECEA1EN3R3	ELECTROLYTIC 25V 3.3UF
C507	ECQV1H474JZ	PLASTIC FILM 50V 470NF
C525	ECEA1CU471	ELECTROLYTIC 16V 470UF
C528	ECEA1CU100	ELECTROLYTIC 16V 10UF
C529	ECQV1H333JZ	PLASTIC FILM 50V 33NF
C531	ECQM1103KZ	PLASTIC FILM 100V 10NF
C541	ECEA1CU100	ELECTROLYTIC 16V 10UF
C542	ECEA1JU100	ELECTROLYTIC 63V 10UF
C543	ECEA1CU100	ELECTROLYTIC 16V 10UF
C545	ECEA1HU100	ELECTROLYTIC 50V 10UF
C546	ECKC2H331J	CERAMIC 500V 330PF
C551	ECEA2CS4R7	ELECTROLYTIC 160V 4.7UF
C552	ECWF2H304J	CAPACITOR 500V 300nf
C553	ECEA2CU4R7	ELECTROLYTIC 160V 4.7UF
C554	ECEA2EU100	ELECTROLYTIC 250V 10UF

Ref No.	Part No.	Description	
C557	ECKC2H471J	CERAMIC 500V	470PF
C558	ECQM2104KZ	PLASTIC FILM 200V	100NF
C559	ECEA1CU100	ELECTROLYTIC 16V	10UF
C562	ECKC2H471J	CERAMIC 500V	470PF
C563	ECEA1CU471	ELECTROLYTIC 16V	470UF
C568	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C569	ECKC1H103JB	CERAMIC 50V	10NF
C575	ECWH12H682J	CAPACITOR 500V	6.8nf
C577	ECKC3D681J	CERAMIC 2.0KV ⚠	680PF
C578	ECKC3D152J	CERAMIC 2.0KV ⚠	1.5NF
C603	ECKC1H103JB	CERAMIC 50V	10NF
C604	ECEA50ZR33	ELECTROLYTIC 50V	0.33UF
C607	ECEA1HU010	ELECTROLYTIC 50V	1UF
C608	ECQV1H474JZ	PLASTIC FILM 50V	470NF
C609	ECQV1H474JZ	PLASTIC FILM 50V	470NF
C610	ECRHA030E11	TRIMMER CAPACITOR	30PF
C611	ECCR1H101J	CERAMIC 50V	100PF
C613	ECKC1H103JB	CERAMIC 50V	10NF
C615	ECEA1VU4R7	ELECTROLYTIC 35V	4.7UF
C617	ECEA1HN2R2	ELECTROLYTIC 50V	2.2UF
C622	ECQV1H334JZ	PLASTIC FILM 50V	330NF
C623	ECQV1H334JZ	PLASTIC FILM 50V	330NF
C624	ECQV1H334JZ	PLASTIC FILM 50V	330NF
C626	ECKC1H103JB	CERAMIC 50V	10NF
C651	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C652	ECKC1H103JB	CERAMIC 50V	10NF
C653	ECCR1H391J	CERAMIC 50V	390PF
C654	ECCR1H101J	CERAMIC 50V	100PF
C655	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C656	ECKC1H102J	CERAMIC 50V	1NF
C657	ECKC1H102J	CERAMIC 50V	1NF
C658	ECEA1HU010	ELECTROLYTIC 50V	1UF
C659	ECKC1H392J	CERAMIC 50V	3.9NF
C660	ECEA50ZR1	ELECTROLYTIC 50V	1UF
C661	ECQM1H223JZ	PLASTIC FILM 50V	22NF
C662	ECEA1CU100	ELECTROLYTIC 16V	10UF
C663	ECEA1HU010	ELECTROLYTIC 50V	1UF
C664	ECKC1H561J	CERAMIC 50V	560PF
C665	ECCR1H560J	CERAMIC 50V	56PF
C666	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C667	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C668	ECCR1H181J	CERAMIC 50V	180PF
C669	ECKC1H221J	CERAMIC 50V	220PF
C670	ECKC1H221J	CERAMIC 50V	220PF
C674	ECCR1H330J	CERAMIC 50V	33PF
C675	ECEA1HU3R3	ELECTROLYTIC 50V	3.3UF
C801	ECQM2A334MW	PLASTIC FILM 100V	330NF
C803	ECKC2H472J	CERAMIC 500V	4.7NF
C804	ECKC2H472J	CERAMIC 500V	4.7NF
C805	ECKC2H472J	CERAMIC 500V	4.7NF
C806	ECKC2H472J	CERAMIC 500V	4.7NF
C807	ECES2GU221	ELECTROLYTIC 400V	220UF
C808	ECEA1HFS100	ELECTROLYTIC 50V	10UF
C809	ECQV1H105JZ	PLASTIC FILM 50V	1UF
C810	ECKC2H103J	CERAMIC 500V	10NF
C811	ECKC3A821J	CERAMIC 1.0KV ⚠	820PF
C812	ECKC3A182J	CERAMIC 1.0KV ⚠	1.8NF
C813	ECKCNS332J	CERAMIC 1.2KV ⚠	3.3NF
C815	ECKC2H122J	CERAMIC 500V	1.2NF
C817	ECKC1H222J	CERAMIC 50V	2.2NF
C819	ECKC1H561J	CERAMIC 50V	560PF
C822	ECKC1H561J	CERAMIC 50V	560PF
C823	ECKC2H331J	CERAMIC 500V	330PF
C827	ECKC2H103J	CERAMIC 500V	10NF
C828	ECQV1H224JZ	PLASTIC FILM 50V	220NF
C851	ECKC3A122J	CERAMIC 1.0KV ⚠	1.2NF
C852	ECKC2H681J	CERAMIC 500V	680PF
C853	ECKC2H102J	CERAMIC 500V	1NF
C854	ECEA2CS101	ELECTROLYTIC 160V	100UF
C855	ECEA1VGE101	ELECTROLYTIC 35V	100UF
C856	ECEA1EGE471	ELECTROLYTIC 25V	470UF
C857	ECEA1EU102	ELECTROLYTIC 25V	1000UF
C1100	ECEA50ZR33	ELECTROLYTIC 50V	0.33UF
C1111	ECKC1H103JB	CERAMIC 50V	10NF
C1112	ECEA1EU471	ELECTROLYTIC 25V	470UF
C1113	ECEA1HU010	ELECTROLYTIC 50V	1UF
C1114	ECKC1H103JB	CERAMIC 50V	10NF
C1117	ECCR1H181J	CERAMIC 50V	180PF
C1118	ECKC1H271J	CERAMIC 50V	270PF
C1119	ECCR1H680J	CERAMIC 50V	68PF
C1120	ECRHA060G11	TRIMMER CAPACITOR	60PF
C1121	ECKC1H103JB	CERAMIC 50V	10NF
C1122	ECEA0JU471	ELECTROLYTIC 6.3V	470UF
C1123	ECCR1H101J	CERAMIC 50V	100PF
C1124	ECCR1H101J	CERAMIC 50V	100PF
C1125	ECKC1H103JB	CERAMIC 50V	10NF
C1127	ECEA50ZR33	ELECTROLYTIC 50V	0.33UF
C1133	ECEA1HU4R7	ELECTROLYTIC 50V	4.7UF
C1134	ECEA1HU2R2	ELECTROLYTIC 50V	2.2UF
C1135	ECEA1HU2R2	ELECTROLYTIC 50V	2.2UF
C1136	ECEA1HU2R2	ELECTROLYTIC 50V	2.2UF

Ref No.	Part No.	Description	
C1137	ECKC1H472J	CERAMIC 50V	4.7NF
C1138	ECKC1H181J	CERAMIC 50V	180PF
C1141	ECKC1H103JB	CERAMIC 50V	10NF
C1144	ECEA50ZR47	ELECTROLYTIC 50V	0.47UF
C1146	ECKC1H472J	CERAMIC 50V	4.7NF
C1149	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C1150	ECKC1H101J	CERAMIC 50V	100PF
C1151	ECKC1H101J	CERAMIC 50V	100PF
C1153	ECCR1H101J	CERAMIC 50V	100PF
C1154	ECKC1H103JB	CERAMIC 50V	10NF
C1155	ERD25TJ103	CARBON 0.25W 5%	10K
C1156	ECEA0JU471	ELECTROLYTIC 6.3V	470UF
C1157	ECKC1H101J	CERAMIC 50V	100PF
C1161	EXFP4471MF	NETWORK COMPONENT	
C1162	EXFP6471ZF	NETWORK COMPONENT	
C1163	ECKC1H103JB	CERAMIC 50V	10NF
C1164	ECKC1H471J	CERAMIC 50V	470PF
C1165	ECKC1H471J	CERAMIC 50V	470PF
C1166	ECCR1H220J	CERAMIC 50V	22PF
C1167	ECEA1HU4R7	ELECTROLYTIC 50V	4.7UF
C1168	ECCR1H220J	CERAMIC 50V	22PF
C1169	ECCR1H121J	CERAMIC 50V	120PF
C1170	ECCR1H121J	CERAMIC 50V	120PF
C1171	ECQM1H223JZ	PLASTIC FILM 50V	22NF
C1172	ECCR1H151J	CERAMIC 50V	150PF
C1601	ECQM1H333JZ	PLASTIC FILM 50V	33NF
C1602	ECEA0JU221	ELECTROLYTIC 6.3V	220UF
C1603	ECEA1HU010	ELECTROLYTIC 50V	1UF
C1604	ECKC1H331J	CERAMIC 50V	330PF
C1605	ECEA1HU0R1	ELECTROLYTIC 50V	0.1UF
C1606	ECEA0JU471	ELECTROLYTIC 6.3V	470UF
C2501	ECEA1CU471	ELECTROLYTIC 16V	470UF
C2502	ECEA1CU471	ELECTROLYTIC 16V	470UF
C2503	ECEA1HN010	ELECTROLYTIC 50V	1UF
C2504	ECEA1HU010	ELECTROLYTIC 50V	1UF
C2505	ECEA1CN100	ELECTROLYTIC 16V	10UF
C2506	ECKC1H222J	CERAMIC 50V	2.2NF
C2507	ECKC1H561J	CERAMIC 50V	560PF
C2601	ECKC1H103JB	CERAMIC 50V	10NF
C2602	ECEA1CU102	ELECTROLYTIC 16V	1000UF
C2603	ECEA1CN100	ELECTROLYTIC 16V	10UF
C2607	ECEA1CU100	ELECTROLYTIC 16V	10UF
C2608	ECQV1H104JZ	PLASTIC FILM 50V	100NF
C2609	ECEA1EN4R7	ELECTROLYTIC 25V	4.7UF
C2612	ECEA1CN100	ELECTROLYTIC 16V	10UF

DIODE

251	MA165TA5	DIODE
D305	MA165TA5	DIODE
D306	MA165TA5	DIODE
D307	MA165TA5	DIODE
D309	MA165TA5	DIODE
D310	MA165TA5	DIODE
D313	MA27TA5	DIODE
D314	MA4030	DIODE
D315	MA165TA5	DIODE
D316	MA165TA5	DIODE
D317	MA165TA5	DIODE
D330	MA700TA5	DIODE
D331	MA700TA5	DIODE
D332	MA165TA5	DIODE
D333	MA165TA5	DIODE
D335	MA165TA5	DIODE
D336	MA700TA5	DIODE
D355	MA165TA5	DIODE
D356	MA165TA5	DIODE
D357	MA165TA5	DIODE
D358	MA165TA5	DIODE
D385	MA165TA5	DIODE
D401	MA29TA5	DIODE
D451	ERA15-02V3	DIODE
D456	MA4300	DIODE
D506	MA4100	DIODE
D508	MA4051	DIODE
D512	MA165TA5	DIODE
D514	MA165TA5	DIODE
D515	MA4360	DIODE
D541	MA1360MTA	DIODE
D543	MA165TA5	DIODE
D544	MA171TA5	DIODE
D551	ERA22-02V3	DIODE
D552	MA167TA5	DIODE
D553	ERA22-02V3	DIODE
D558	MA700TA5	DIODE
D559	MA165TA5	DIODE
D575	ERB06-15	DIODE
D651	MA165TA5	DIODE
D801	D4SB80Z	BRIDGE

Ref No.	Part No.	Description
D805	232266296009	DIODE
D807	EU02	DIODE
D809	EU02	DIODE
D810	TVSB2808D	DIODE
D811	ON3105.TV	OPTOCOUPLER
D851	TVSC2408M	DIODE
D852	EU02	DIODE
D853	ERD32-02L7	DIODE
D854	TVSSR2KL	DIODE
D1113	MA165TA5	DIODE
D1115	MA165TA5	DIODE
D1116	MA165TA5	DIODE
D1117	MA165TA5	DIODE
D1121	LN81RPHL	DIODE
D1122	TVSS1WBS10	DIODE
D1123	MA165TA5	DIODE
D1124	MA4051	DIODE
D1125	MA165TA5	DIODE
D1127	MA165TA5	DIODE
D1128	MA165TA5	DIODE
D1129	MA165TA5	DIODE
D1133	MA165TA5	DIODE
D1134	MA165TA5	DIODE
D1136	MA29TA5	DIODE
D1142	MA165TA5	DIODE
D1143	MA165TA5	DIODE
D1601	PN323BHT	DIODE
D2501	MA165TA5	DIODE
D2502	MA165TA5	DIODE

I.C.s

IC70	UPC574J	REGULATOR
IC101	TDA4505M-N3	VIF/SIF/SYNC I.C.
IC251	AN5265	AUDIO OUTPUT I.C.
IC451	TDA3653A	VERTICAL O/PUT I.C.
IC551	L78M12MRB	12V REGULATOR
IC601	TDA3562A	VIDEO/CHROMA I.C..
IC651	TDA3590A	SECAM DECODER I.C.
IC801	STR54041-M	REG. POWER I.C.
IC1110	MN15285TEH	C.P.U I.C.
IC1111	MN12C201T	MEMORY I.C.
IC1112	MN1280R	RESET I.C.
IC1601	AN5025K	REMOTE RECEIVER I.C.
IC2601	M51320P	TV/AV SWITCH

COILS

L11	TLT082K991R	COIL
L16	TLT082K991R	COIL
L17	TLT082K991R	COIL
L18	TLT082K991K	COIL
L22	TLT047K991R	COIL
L101	TLI151757	COIL
L102	TLI151757	COIL
L103	TLT100K166C	COIL
L104	TLS61353-1	COIL
L106	TSC937	CHOKE
L202	TLT047K991R	COIL
L203	TLT220K991R	COIL
L301	TLX330J176C	COIL
L302	TSC937	CHOKE
L351	TLT181K991R	COIL
L352	TLT181K991R	COIL
L353	TLT181K991R	COIL
L354	TSC937	CHOKE
L355	TSC937	CHOKE
L356	TSC937	CHOKE
L451	TLQ082K236B	COIL
L528	TLT082K991R	COIL
L551	ELC07B014	COIL
L552	ELH16F729	COIL
L553	TLH15652P	TRANSFORMER
L555	TSC925-4	CHOKE
L556	TLP408C	TRANSFORMER
L602	EIK1EG013B	COIL
L603	TLK158069	COIL
L651	TLK151060	COIL
L655	TLK61008-1	COIL
L656	TLT100K991R	COIL
L657	TLT100K991R	COIL
L801	ELF18D650L	FILTER
L802	ELF18D650L	FILTER
L803	TSC925-4	CHOKE
L806	TSC937	CHOKE
L852	TSC925-4	CHOKE

Ref No.	Part No.	Description
L853	TLQ056K236B	COIL
L854	TSC937	CHOKE
L855	TSC937	CHOKE
L1111	ELEXT100KA	COIL
L1112	ELEXT100KA	COIL
L1113	ELEXT100KA	COIL
L1114	ELEXT100KA	COIL
L1115	ELEXT100KA	COIL
L1116	ELEXT100KA	COIL
L1117	ELEXT100KA	COIL
L1118	ELEXT100KA	COIL
L1119	ELEXT100KA	COIL
L1120	ELEXT100KA	COIL
L1121	ELEXT100KA	COIL
L1122	ELEXT100KA	COIL
L1123	ELEXT100KA	COIL
L1124	ELEXT100KA	COIL
L1126	ELEXT100KA	COIL
L1127	ELEXT100KA	COIL
L1128	ELEXT100KA	COIL
L1129	ELEXT100KA	COIL
L1130	ELEXT100KA	COIL
L1131	ELEXT100KA	COIL
L1132	ELKTH150GA	COIL
L1133	ELKTH150GA	COIL
L1134	ELKTH150GA	COIL
L1135	ELEXT100KA	COIL
L1136	TSC925-4	CHOKE
L1137	TLT047K991R	COIL
L1138	TLT068K991R	COIL
L1139	TLT010K991R	COIL
L1140	ELEXT100KA	COIL
L1141	ELEXT100KA	COIL
L1142	ELEXT100KA	COIL
L1143	ELEXT100KA	COIL
L1144	ELEXT100KA	COIL
L1145	ELEXT100KA	COIL
L1146	TLT010K991R	COIL
L1147	ELEXT100KA	COIL
L1148	ELEXT100KA	COIL
L1149	TLT100K991R	COIL
L1150	ELEXT100KA	COIL
L1151	ELEXT100KA	COIL
L1152	TLT100K991R	COIL
L1153	TLT100K991R	COIL
L1154	TLT100K991R	COIL
L2501	TLT056K991R	COIL
LC601	TLK153162E	COIL

TRANSISTORS

Q101	2SC1685-TA	VIDEO BUFFER
Q104	2SC2636-T	VIF AMP
Q251	2SA564-S	POWER ON MUTE
Q303	2SC2636-T	PICTURE CONTROL
Q304	2SC1685-TA	BLANKING
Q306	UN4211TA	SWITCH
Q307	2SC2636-T	TRANSISTOR
Q308	2SC1685-TA	TRANSISTOR
Q309	2SC1685-TA	TRANSISTOR
Q310	2SC1685-TA	TRANSISTOR
Q311	2SC1685-TA	TRANSISTOR
Q351	2SC2923-RL	G VIDEO OUTPUT
Q352	2SC2923-RL	B VIDEO OUTPUT
Q353	2SC2923-RL	R VIDEO OUTPUT
Q356	2SA719-TA	CRT DISCHARGE
Q501	2SD836-AL	H.DRIVE
Q507	UN4111TA	SPOT SUPP.
Q541	2SA564-S	TRANSISTOR
Q542	2SC1685-TA	TRANSISTOR
Q551	2SD1439-RL	H.OUTPUT
Q651	2SC1685-TA	CARRIER AMP
Q652	2SA564-S	LUMINANCE AMP
Q655	2SC1685-TA	IDENT SWITCH
Q801	2SD965-R	OVER CURRENT
Q802	2SD965-R	STANDBY R/C
Q1110	2SC1688-TA	TRANSISTOR
Q1115	2SC1685-TA	TRANSISTOR
Q1116	2SC1685-TA	TRANSISTOR
Q1117	UN4111TA	BAND SWITCHING
Q1118	UN4111TA	BAND SWITCHING
Q1119	UN4111TA	BAND SWITCHING
Q1120	UN4211TA	AFC DEFEAT SWITCH
Q1121	2SC1685-TA	AFC DEFEAT
Q1122	2SC1317-TA	5V REGULATOR
Q1123	2SC1685-TA	TRANSISTOR
Q1124	2SC1685-TA	TRANSISTOR
Q1125	UN4211TA	SWITCH
Q1126	UN4211TA	SWITCH

Ref No.	Part No.	Description
Q1127	2SC1685-TA	TRANSISTOR
Q1128	UN4213TA	TRANS
Q1129	UN4211TA	TRANSISTOR
Q1130	2SC1685-TA	TRANSISTOR
Q1134	2SC1685-TA	TRANSISTOR
Q2501	2SC1685-TA	TRANSISTOR
Q2502	2SA564-S	TRANSISTOR
Q2503	2SC1685-TA	TRANSISTOR
Q2504	2SC1685-TA	TRANSISTOR

RESISTORS

Ref No.	Part No.	Description	
R14	ERD25TJ185	CARBON 0.25W 5%	1.8M
R30	ERD25TJ153	CARBON 0.25W 5%	15K
R31	ERD25TJ222	CARBON 0.25W 5%	2.2K
R70	ERG1ANJ153	METAL 1W ⚠ 5%	15K
R102	EVND4AA00B14	VARIABLE RESISTOR	10K
R103	ERD25TJ822	CARBON 0.25W 5%	8.2K
R104	ERD25TJ272	CARBON 0.25W 5%	2.7K
R106	ERD25TJ471	CARBON 0.25W 5%	470
R107	ERD25TJ562	CARBON 0.25W 5%	5.6K
R108	ERD25TJ2R2	CARBON 0.25W 5%	2.2
R110	ERD25TJ101	CARBON 0.25W 5%	100
R111	ERD25TJ122	CARBON 0.25W 5%	1.2K
R112	ERD25TJ155	CARBON 0.25W 5%	1.5M
R113	ERD25TJ333	CARBON 0.25W 5%	33K
R115	ERD25TJ472	CARBON 0.25W 5%	4.7K
R116	ERD25TJ391	CARBON 0.25W 5%	390
R119	ERD25TJ684	CARBON 0.25W 5%	680K
R120	ERD25TJ471	CARBON 0.25W 5%	470
R122	ERD25TJ472	CARBON 0.25W 5%	4.7K
R124	ERD25TJ562	CARBON 0.25W 5%	5.6K
R126	ERD25TJ222	CARBON 0.25W 5%	2.2K
R127	ERD25TJ562	CARBON 0.25W 5%	5.6K
R128	ERD25TJ562	CARBON 0.25W 5%	5.6K
R129	ERD25TJ821	CARBON 0.25W 5%	820
R130	ERD25TJ330	CARBON 0.25W 5%	33
R131	ERD25TJ125	CARBON 0.25W 5%	1.2M
R201	ERD25TJ471	CARBON 0.25W 5%	470
R203	ERD25TJ472	CARBON 0.25W 5%	4.7K
R206	ERD25TJ222	CARBON 0.25W 5%	2.2K
R207	EVND4AA00B53	VARIABLE RESISTOR	5K
R251	ERG1ANJ331	METAL 1W ⚠ 5%	330
R252	ERD25TJ101	CARBON 0.25W 5%	100
R253	ERD25TJ221	CARBON 0.25W 5%	220
R254	ERD25TJ471	CARBON 0.25W 5%	470
R256	ERD25TJ332	CARBON 0.25W 5%	3.3K
R257	ERD25TJ3R3	CARBON 0.25W 5%	3.3
R258	ERQ1CJP120	FILM 1W 5% ⚠	12
R259	ERD25TJ472	CARBON 0.25W 5%	4.7K
R260	ERD25TJ332	CARBON 0.25W 5%	3.3K
R261	ERD25TJ103	CARBON 0.25W 5%	10K
R301	ERD25TJ152	CARBON 0.25W 5%	1.5K
R302	ERD25TJ561	CARBON 0.25W 5%	560
R303	ERD25TJ272	CARBON 0.25W 5%	2.7K
R304	EVND4AA00B52	VARIABLE RESISTOR	500
R305	ERD25TJ152	CARBON 0.25W 5%	1.5K
R306	ERD25TJ122	CARBON 0.25W 5%	1.2K
R307	ERD25TJ561	CARBON 0.25W 5%	560
R308	ERD25TJ822	CARBON 0.25W 5%	8.2K
R309	ERD25TJ822	CARBON 0.25W 5%	8.2K
R310	ERD25TJ182	CARBON 0.25W 5%	1.8K
R311	ERD25TJ102	CARBON 0.25W 5%	1.0K
R313	ERD25TJ102	CARBON 0.25W 5%	1.0K
R314	ERD25TJ102	CARBON 0.25W 5%	1.0K
R315	ERD25TJ102	CARBON 0.25W 5%	1.0K
R316	ERD25TJ471	CARBON 0.25W 5%	470
R317	EVND4AA00B54	VARIABLE RESISTOR	50K
R318	ERD25TJ274	CARBON 0.25W 5%	270K
R319	ERD25TJ563	CARBON 0.25W 5%	56K
R321	EVND4AA00B24	VARIABLE RESISTOR	20K
R322	ERD25TJ563	CARBON 0.25W 5%	56K
R324	ERD25TJ393	CARBON 0.25W 5%	39K
R325	ERD25TJ102	CARBON 0.25W 5%	1.0K
R326	ERD25TJ101	CARBON 0.25W 5%	100
R327	ERD25TJ121	CARBON 0.25W 5%	120
R328	ERD25TJ102	CARBON 0.25W 5%	1.0K
R329	ERD25TJ682	CARBON 0.25W 5%	6.8K
R330	ERD25TJ103	CARBON 0.25W 5%	10K
R331	EVUE2AM30B14	VARIABLE RESISTOR	10K
R332	ERD25TJ103	CARBON 0.25W 5%	10K
R333	ERD25TJ103	CARBON 0.25W 5%	10K
R334	ERD25TJ103	CARBON 0.25W 5%	10K
R335	ERDS1TJ471	CARBON 0.5W 5%	470
R336	ERD25TJ273	CARBON 0.25W 5%	27K
R337	ERD25TJ104	CARBON 0.25W 5%	100K
R338	ERD25TJ102	CARBON 0.25W 5%	1.0K
R339	ERD25TJ103	CARBON 0.25W 5%	10K
R340	ERD25TJ331	CARBON 0.25W 5%	330

Ref No.	Part No.	Description	
R345	ERO25CKF7151	METAL 0.25W 5% ⚠	7.15K
R346	ERO25CKF3001	METAL 0.25W 5% ⚠	3.00K
R347	ERD25TJ102	CARBON 0.25W 5%	1.0K
R349	ERD25TJ123	CARBON 0.25W 5%	12K
R351	ERG2ANJ822	METAL 2W ⚠ 5%	8.2K
R352	ERG2ANJ822	METAL 2W ⚠ 5%	8.2K
R353	ERG2ANJ822	METAL 2W ⚠ 5%	8.2K
R354	ERD25TJ181	CARBON 0.25W 5%	180
R355	ERD25TJ271	CARBON 0.25W 5%	270
R356	ERD25TJ181	CARBON 0.25W 5%	180
R357	EVN65AA00B22	VARIABLE RESISTOR	200
R358	EVN65AA00B22	VARIABLE RESISTOR	200
R359	ERD25TJ471	CARBON 0.25W 5%	470
R360	ERD25TJ471	CARBON 0.25W 5%	470
R361	ERD25TJ471	CARBON 0.25W 5%	470
R362	EVN65AA00B53	VARIABLE RESISTOR	5K
R364	EVN65AA00B53	VARIABLE RESISTOR	5K
R366	ERDS1TJ152	CARBON 0.5W 5%	1.5K
R367	ERDS1TJ152	CARBON 0.5W 5%	1.5K
R369	EVN65AA00B53	VARIABLE RESISTOR	5K
R374	ERD25TJ104	CARBON 0.25W 5%	100K
R375	ERDS1TJ152	CARBON 0.5W 5%	1.5K
R376	ERD25TJ103	CARBON 0.25W 5%	10K
R377	ERD25TJ391	CARBON 0.25W 5%	390
R380	ERD25TJ102	CARBON 0.25W 5%	1.0K
R381	ERD25TJ102	CARBON 0.25W 5%	1.0K
R382	ERD25TJ822	CARBON 0.25W 5%	8.2K
R383	ERD25TJ181	CARBON 0.25W 5%	180
R384	ERD25TJ102	CARBON 0.25W 5%	1.0K
R385	ERD25TJ153	CARBON 0.25W 5%	15K
R401	ERD25TJ101	CARBON 0.25W 5%	100
R402	ERO25CKF8203	METAL 0.25W 5% ⚠	820K
R404	ERD25TJ123	CARBON 0.25W 5%	12K
R423	ERD25TJ105	CARBON 0.25W 5%	1.0M
R424	ERD25TJ395	CARBON 0.25W 5%	3.9M
R425	ERD25TJ683	CARBON 0.25W 5%	68K
R426	ERD25TJ225	CARBON 0.25W 5%	2.2M
R452	ERD25TJ182	CARBON 0.25W 5%	1.8K
R453	ERD25TJ470	CARBON 0.25W 5%	47
R454	ERD25TJ432	CARBON 0.25W 5%	4.3K
R456	EVND4AA00B22	VARIABLE RESISTOR	200
R458	ERDS1TJ132	CARBON 0.5W 5%	1.3K
R461	ERDS1TJ2R2	CARBON 0.5W 5%	2.2
R464	ERD25TJ561	CARBON 0.25W 5%	560
R466	ERD25TJ272	CARBON 0.25W 5%	2.7K
R469	ERD25TJ331	CARBON 0.25W 5%	330
R472	ERD25TJ223	CARBON 0.25W 5%	22K
R473	ERD25TJ332	CARBON 0.25W 5%	3.3K
R481	ERD25TJ331	CARBON 0.25W 5%	330
R482	TSF19631	FUSABLE LINK ⚠	
R483	ERD25TJ102	CARBON 0.25W 5%	1.0K
R484	ERD25TJ122	CARBON 0.25W 5%	1.2K
R502	ERD25TJ124	CARBON 0.25W 5%	120K
R503	ERO25CKF3002	METAL 0.25W 5% ⚠	30.0K
R504	EVND4AA00B14	VARIABLE RESISTOR	10K
R505	ERD25TJ123	CARBON 0.25W 5%	12K
R506	ERD25TJ682	CARBON 0.25W 5%	6.8K
R507	ERD25TJ272	CARBON 0.25W 5%	2.7K
R509	ERD25TJ333	CARBON 0.25W 5%	33K
R510	ERD25TJ222	CARBON 0.25W 5%	2.2K
R511	EVND4AA00B23	VARIABLE RESISTOR	2K
R513	ERD25TJ102	CARBON 0.25W 5%	1.0K
R514	ERD25TJ562	CARBON 0.25W 5%	5.6K
R515	ERD25TJ471	CARBON 0.25W 5%	470
R521	ERD25TJ561	CARBON 0.25W 5%	560
R524	ERD25TJ561	CARBON 0.25W 5%	560
R526	ERD25TJ183	CARBON 0.25W 5%	18K
R527	ERD25TJ221	CARBON 0.25W 5%	220
R528	ERD25TJ275	CARBON 0.25W 5%	2.7M
R532	ERD25TJ562	CARBON 0.25W 5%	5.6K
R533	ERG2ANJ391	METAL 2W ⚠ 5%	390
R534	ERD25TJ332	CARBON 0.25W 5%	3.3K
R542	ERD25TJ474	CARBON 0.25W 5%	470K
R543	ERD25TJ103	CARBON 0.25W 5%	10K
R545	ERD25TJ103	CARBON 0.25W 5%	10K
R546	ERD25TJ823	CARBON 0.25W 5%	82K
R547	ERD25TJ103	CARBON 0.25W 5%	10K
R548	ERD25TJ183	CARBON 0.25W 5%	18K
R551	ERF7ZK8R2	WOUND 7W 10%	8.2
R552	ERQ12HJ1R2	FILM 0.5W 5% ⚠	1.2
R554	ERQ14AJ151	FILM 0.25W 5% ⚠	150
R556	TSF19102	FUSABLE LINK ⚠	
R557	ERQ1CJP3R9	FILM 1W 5% ⚠	3.9
R558	ERQ2CJP180	FILM 2W 5% ⚠	18
R559	ERD25TJ274	CARBON 0.25W 5%	270K
R560	ERDS1TJ1R5	CARBON 0.5W 5%	1.5
R561	ERD25TJ153	CARBON 0.25W 5%	15K
R562	ERD25TJ154	CARBON 0.25W 5%	150K
R564	ERDS1TJ1R8	CARBON 0.5W 5%	1.8
R565	ERQ1CJP681	FILM 1W 5% ⚠	680
R602	ERD25TJ222	CARBON 0.25W 5%	2.2K

Ref No.	Part No.	Description	
R604	ERD25TJ123	CARBON 0.25W 5%	12K
R606	EVND4AA00B54	VARIABLE RESISTOR	50K
R607	ERD25TJ102	CARBON 0.25W 5%	1.0K
R608	ERD25TJ122	CARBON 0.25W 5%	1.2K
R609	EVND4AA00B13	VARIABLE RESISTOR	10K
R610	ERD25TJ391	CARBON 0.25W 5%	390
R611	ERD25TJ471	CARBON 0.25W 5%	470
R612	ERO25CKF1002	METAL 0.25W 5% ⚠	10.0K
R614	ERO25CKF1002	METAL 0.25W 5% ⚠	10.0K
R616	ERD25TJ101	CARBON 0.25W 5%	100
R617	ERD25TJ101	CARBON 0.25W 5%	100
R618	ERD25TJ101	CARBON 0.25W 5%	100
R626	ERD25TJ103	CARBON 0.25W 5%	10K
R628	ERD25TJ682	CARBON 0.25W 5%	6.8K
R629	ERD25TJ513	CARBON 0.25W 5%	51K
R630	ERD25TJ103	CARBON 0.25W 5%	10K
R654	ERD25TJ152	CARBON 0.25W 5%	1.5K
R655	ERD25TJ152	CARBON 0.25W 5%	1.5K
R656	ERD25TJ222	CARBON 0.25W 5%	2.2K
R657	ERD25TJ102	CARBON 0.25W 5%	1.0K
R658	EVND4AA00B13	VARIABLE RESISTOR	10K
R661	ERD25TJ562	CARBON 0.25W 5%	5.6K
R662	ERD25TJ471	CARBON 0.25W 5%	470
R663	ERD25TJ101	CARBON 0.25W 5%	100
R664	ERD25TJ331	CARBON 0.25W 5%	330
R665	ERD25TJ182	CARBON 0.25W 5%	1.8K
R672	ERD25TJ272	CARBON 0.25W 5%	2.7K
R673	ERD25TJ822	CARBON 0.25W 5%	8.2K
R674	ERD25TJ822	CARBON 0.25W 5%	8.2K
R675	ERD25TJ102	CARBON 0.25W 5%	1.0K
R680	ERD25TJ221	CARBON 0.25W 5%	220
R681	ERD25TJ182	CARBON 0.25W 5%	1.8K
R802	ERF5ZK4R7	WOUND 5W 10%	4.7
R803	ERDS1TJ564	CARBON 0.5W 5%	560K
R804	ERDS1TJ333	CARBON 0.5W 5%	33K
R805	ERDS1TJ333	CARBON 0.5W 5%	33K
R810	ERDS1TJ3R9	CARBON 0.5W 5%	3.9
R811	ERW12PKR27	WOUND 0.5W ⚠	0.27
R812	ERG2ANJ121	METAL 2W ⚠ 5%	120
R813	ERG1ANJ683	METAL 1W ⚠ 5%	68K
R814	ERD75TAJ825	CARBON 0.75W 5%	8.2M
R815	ERQ14AJ5R6	FILM 0.25W 5% ⚠	5.6
R816	ERD25TJ222	CARBON 0.25W 5%	2.2K
R817	ERDS1TJ683	CARBON 0.5W 5%	68K
R818	ERD25TJ274	CARBON 0.25W 5%	270K
R820	ERDS1TJ473	CARBON 0.5W 5%	47K
R821	ERDS1TJ473	CARBON 0.5W 5%	47K
R822	ERDS1TJ683	CARBON 0.5W 5%	68K
R851	ERQ12HJ2R2	FILM 0.5W 5% ⚠	2.2
R852	ERQ1CKPR82	FILM 1W 5% ⚠	0.82
R1108	ERD25TJ221	CARBON 0.25W 5%	220
R1109	TSF19631	FUSABLE LINK ⚠	
R1110	ERD25TJ103	CARBON 0.25W 5%	10K
R1112	ERD25TJ103	CARBON 0.25W 5%	10K
R1116	ERD25TJ223	CARBON 0.25W 5%	22K
R1117	ERD25TJ103	CARBON 0.25W 5%	10K
R1119	ERD25TJ104	CARBON 0.25W 5%	100K
R1120	ERD25TJ104	CARBON 0.25W 5%	100K
R1121	ERD25TJ102	CARBON 0.25W 5%	1.0K
R1122	ERD25TJ102	CARBON 0.25W 5%	1.0K
R1123	ERD25TJ102	CARBON 0.25W 5%	1.0K
R1124	ERD25TJ101	CARBON 0.25W 5%	100
R1125	ERD25TJ101	CARBON 0.25W 5%	100
R1126	ERD25TJ101	CARBON 0.25W 5%	100
R1127	ERD25TJ101	CARBON 0.25W 5%	100
R1128	ERD25TJ101	CARBON 0.25W 5%	100
R1129	ERD25TJ101	CARBON 0.25W 5%	100
R1130	ERD25TJ101	CARBON 0.25W 5%	100
R1131	ERD25TJ392	CARBON 0.25W 5%	3.9K
R1132	ERD25TJ203	CARBON 0.25W 5%	20K
R1133	ERD25TJ622	CARBON 0.25W 5%	6.2K
R1134	ERD25TJ332	CARBON 0.25W 5%	3.3K
R1135	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1136	ERD25TJ203	CARBON 0.25W 5%	20K
R1137	ERD25TJ622	CARBON 0.25W 5%	6.2K
R1138	ERD25TJ332	CARBON 0.25W 5%	3.3K
R1139	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1140	ERD25TJ273	CARBON 0.25W 5%	27K
R1141	ERD25TJ332	CARBON 0.25W 5%	3.3K
R1142	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1143	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1144	ERD25TJ203	CARBON 0.25W 5%	20K
R1145	ERD25TJ103	CARBON 0.25W 5%	10K
R1146	ERD25TJ103	CARBON 0.25W 5%	10K
R1148	ERD25TJ103	CARBON 0.25W 5%	10K
R1150	ERD25TJ153	CARBON 0.25W 5%	15K
R1152	ERD25TJ221	CARBON 0.25W 5%	220
R1153	ERD25TJ102	CARBON 0.25W 5%	1.0K
R1154	ERD25TJ472	CARBON 0.25W 5%	4.7K
R1155	ERD25TJ183	CARBON 0.25W 5%	18K
R1156	ERD25TJ123	CARBON 0.25W 5%	12K

Ref No.	Part No.	Description	
R1157	ERD25TJ224	CARBON 0.25W 5%	220K
R1158	ECKC1H103JB	CERAMIC 50V	10NF
R1159	ERD25TJ681	CARBON 0.25W 5%	680
R1160	ERD25TJ123	CARBON 0.25W 5%	12K
R1161	ERD25TJ563	CARBON 0.25W 5%	56K
R1162	ERD25TJ222	CARBON 0.25W 5%	2.2K
R1163	ERD25TJ223	CARBON 0.25W 5%	22K
R1164	ERD25TJ103	CARBON 0.25W 5%	10K
R1165	ERD25TJ562	CARBON 0.25W 5%	5.6K
R1166	ERD25TJ153	CARBON 0.25W 5%	15K
R1167	ERD25TJ222	CARBON 0.25W 5%	2.2K
R1168	ERD25TJ472	CARBON 0.25W 5%	4.7K
R1169	ERD25TJ123	CARBON 0.25W 5%	12K
R1170	ERD25TJ183	CARBON 0.25W 5%	18K
R1171	ERD25TJ222	CARBON 0.25W 5%	2.2K
R1172	ERD25TJ222	CARBON 0.25W 5%	2.2K
R1173	ERD25TJ104	CARBON 0.25W 5%	100K
R1174	ERD25TJ222	CARBON 0.25W 5%	2.2K
R1175	ERD25TJ221	CARBON 0.25W 5%	220
R1176	ERD25TJ103	CARBON 0.25W 5%	10K
R1177	ERD25TJ153	CARBON 0.25W 5%	15K
R1178	ERD25TJ103	CARBON 0.25W 5%	10K
R1179	ERD25TJ103	CARBON 0.25W 5%	10K
R1180	ERD25TJ103	CARBON 0.25W 5%	10K
R1183	ERD25TJ562	CARBON 0.25W 5%	5.6K
R1184	ERD25TJ151	CARBON 0.25W 5%	150
R1185	ERD25TJ562	CARBON 0.25W 5%	5.6K
R1186	ERDS1TJ561	CARBON 0.5W 5%	560
R1187	ERD25TJ562	CARBON 0.25W 5%	5.6K
R1188	ERD25TJ203	CARBON 0.25W 5%	20K
R1189	ERD25TJ622	CARBON 0.25W 5%	6.2K
R1190	ERD25TJ222	CARBON 0.25W 5%	2.2K
R1191	ERD25TJ332	CARBON 0.25W 5%	3.3K
R1192	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1194	ERD25TJ472	CARBON 0.25W 5%	4.7K
R1195	ERD25TJ512	CARBON 0.25W 5%	5.1K
R1196	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1197	ERD25TJ103	CARBON 0.25W 5%	10K
R1198	ERD25TJ822	CARBON 0.25W 5%	8.2K
R1199	ERD25TJ103	CARBON 0.25W 5%	10K
R1201	ERD25TJ152	CARBON 0.25W 5%	1.5K
R1202	ERD25TJ182	CARBON 0.25W 5%	1.8K
R1203	ERD25TJ152	CARBON 0.25W 5%	1.5K
R1206	ERD25TJ103	CARBON 0.25W 5%	10K
R1207	ERD25TJ102	CARBON 0.25W 5%	1.0K
R1214	ERD25TJ103	CARBON 0.25W 5%	10K
R1215	ERD25TJ103	CARBON 0.25W 5%	10K
R1216	ERD25TJ103	CARBON 0.25W 5%	10K
R1217	ERD25TJ103	CARBON 0.25W 5%	10K
R1218	ERD25TJ101	CARBON 0.25W 5%	100
R1219	ERD25TJ101	CARBON 0.25W 5%	100
R1220	ERD25TJ104	CARBON 0.25W 5%	100K
R1221	ERD25TJ683	CARBON 0.25W 5%	68K
R1601	ERD25TJ183	CARBON 0.25W 5%	18K
R1602	ERD25TJ274	CARBON 0.25W 5%	270K
R1603	EVND4AA00B15	VARIABLE RESISTOR	100K
R1604	ERD25TJ4R7	CARBON 0.25W 5%	4.7
R1605	ERD25TJ101	CARBON 0.25W 5%	100
R1606	ERD25TJ101	CARBON 0.25W 5%	100
R2501	ERD25TJ101	CARBON 0.25W 5%	100
R2502	ERD25TJ222	CARBON 0.25W 5%	2.2K
R2503	ERD25TJ101	CARBON 0.25W 5%	100
R2504	ERD25TJ750	CARBON 0.25W 5%	75
R2505	ERD25TJ681	CARBON 0.25W 5%	680
R2506	ERD25TJ680	CARBON 0.25W 5%	68
R2507	ERD25TJ103	CARBON 0.25W 5%	10K
R2508	ERD25TJ750	CARBON 0.25W 5%	75
R2509	ERD25TJ180	CARBON 0.25W 5%	18
R2510	ERD25TJ560	CARBON 0.25W 5%	56
R2511	ERD25TJ180	CARBON 0.25W 5%	18
R2512	ERD25TJ560	CARBON 0.25W 5%	56
R2513	ERD25TJ180	CARBON 0.25W 5%	18
R2514	ERD25TJ560	CARBON 0.25W 5%	56
R2515	ERD25TJ473	CARBON 0.25W 5%	47K
R2516	ERD25TJ104	CARBON 0.25W 5%	100K
R2517	ERD25TJ221	CARBON 0.25W 5%	220
R2518	ERD25TJ101	CARBON 0.25W 5%	100
R2519	ERD25TJ103	CARBON 0.25W 5%	10K
R2520	ERD25TJ104	CARBON 0.25W 5%	100K
R2521	ERD25TJ473	CARBON 0.25W 5%	47K
R2522	ERD25TJ103	CARBON 0.25W 5%	10K
R2601	ERD25TJ8R2	CARBON 0.25W 5%	8.2
R2625	ERD25TJ102	CARBON 0.25W 5%	1.0K

SWITCHES

S301	EVQR1AL13	SERVICE SWITCH
S401	EVQR4AL13	VERT. SHIFT
S1110	EVQQBH12T	VOL. UP

Ref No.	Part No.	Description
S1111	EVQQBH12T	VOL. DOWN
S1112	EVQQBH12T	CH. UP
S1113	EVQQBH12T	CH. DOWN
S1114	EVQQBH12G	SEARCH UP
S1115	EVQQBH12G	SEARCH DOWN
S1116	EVQQBH12T	TV/AV
S1117	EVQQBH12G	PRESET
S1118	EVQQBH12G	NORMAL STORE
S1119	EVQQBH12G	STORE
S1120	EVQQBH12T	BRIGHT UP
S1121	EVQQBH12T	BRIGHT DOWN
S1122	EVQQBH12T	COLOUR UP
S1123	EVQQBH12T	COLOUR DOWN
S1124	EVQQBH12G	H.S SEARCH

Ref No.	Part No.	Description
TRANSFORMERS		
T201	EIS1EG014B	TRANSFORMER
T202	EIS7ES710B	SIF TRANSFORMER
T531	ETH19Y53AY	TRANSFORMER
T801 ⚠	ETS42K610A	CHOPPER TRANSFORMER
T802 ⚠	ETP35KE65E	TRANSFORMER
FILTERS		
X101	SW174A	FILTER
X201	EFCS5R5MS3	FILTER
X301	EFCA4R43MB3	FILTER
X601	TSS2003-M	CRYSTAL
X1110	TAFCSA2.00MG	CRYSTAL